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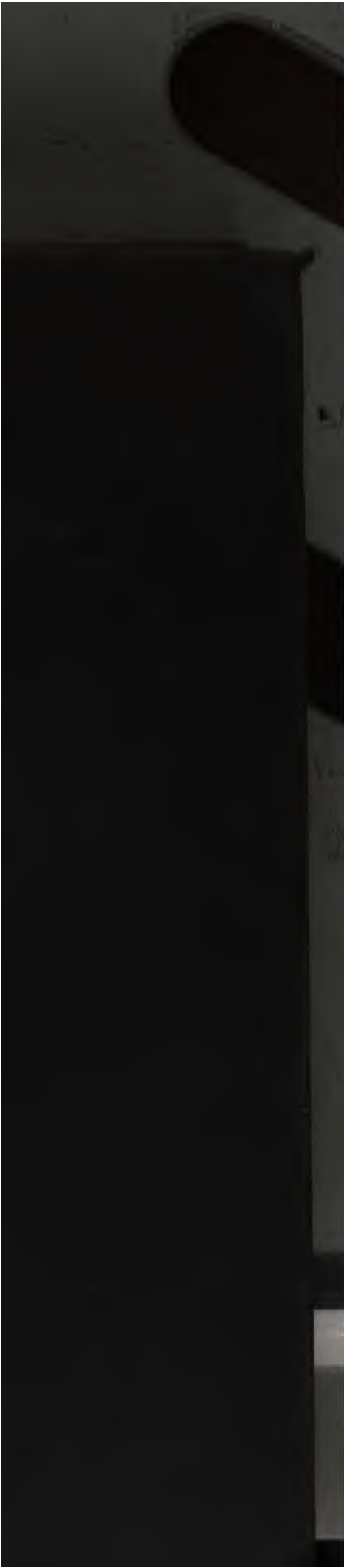
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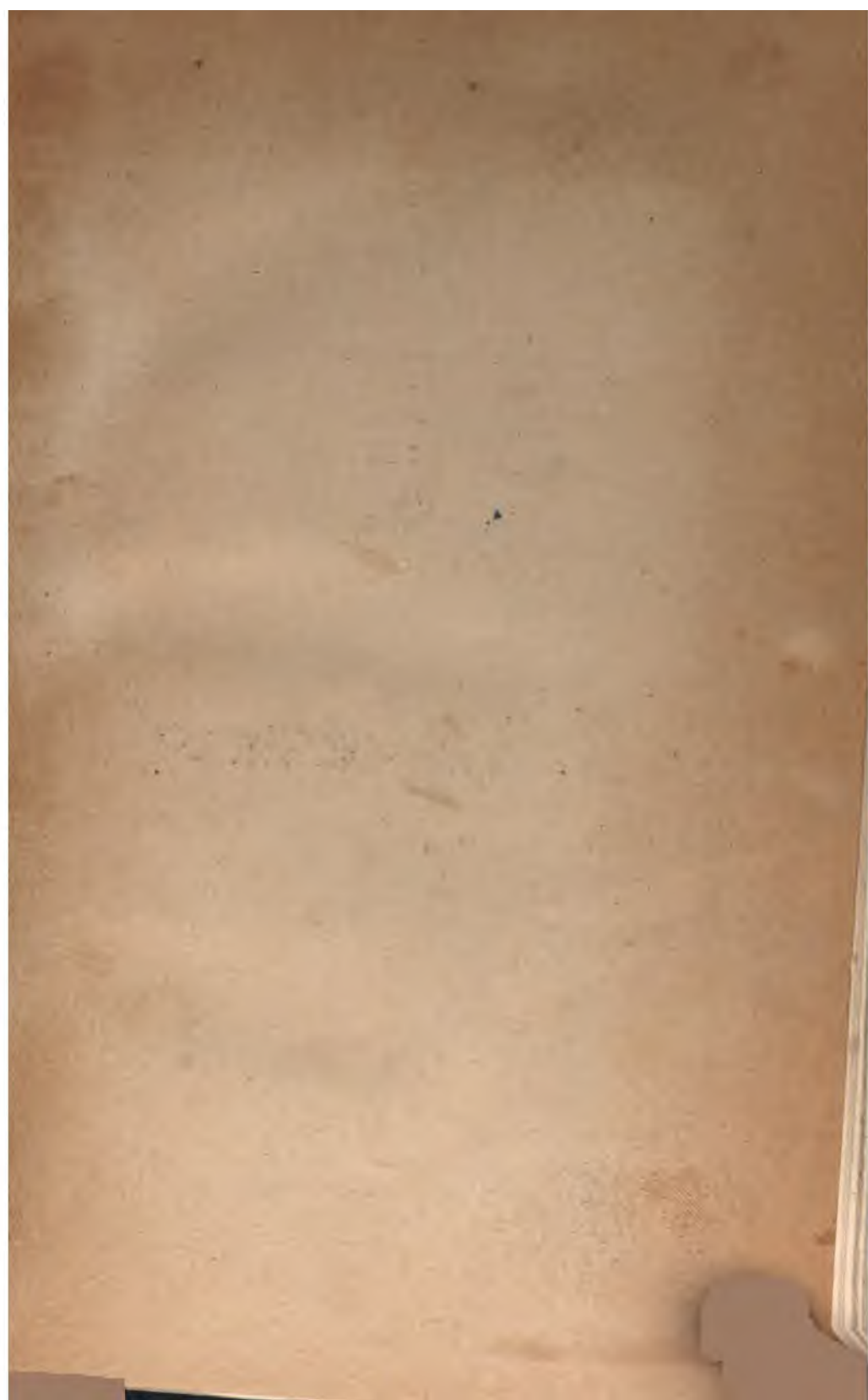


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DISEASES OF THE SKIN

DISEASES OF THE SKIN

BY

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*TWO HUNDRED AND THIRTY-THREE ILLUSTRATIONS,
INCLUDING FOUR COLOR PLATES*

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1915

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Press of
C. V. Mosby Company
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315

TO
MY ALMA MATER
JOHNS HOPKINS UNIVERSITY
THIS BOOK IS DEDICATED

PREFACE

An apology is certainly needed for writing another book upon diseases of the skin, for there are now many upon the market. However, it seems to me that there is at present no book that is altogether suitable for either the student or general practitioner. The large works are too voluminous, and contain such a wealth of material that it is hard for the inexperienced reader to grasp the essential facts, while the small books are rather exaggerated quiz compends, that do not pay enough attention to the common diseases either in the matter of text or of illustrations. Nor do any of the books give the histopathology of even the common diseases in a way that can be grasped by the novice.

In writing this book, I have attempted to describe fully the common diseases, and to do so have been forced to omit many of the very rare ones. At the same time, I have attempted to describe those which are now attracting attention, and which are probably much commoner than has been realized. I have omitted illustrations of the rare diseases, although the temptation has at times been very strong, and have even ventured to include photomicrographs illustrating the histopathology of many of the common dermatoses, for I believe that a knowledge of pathology is always essential to correct diagnosis and treatment. I have given a limited bibliography, chiefly in the English language, for the reason that this is the only tongue that is available to many of us, and also to show that Americans are doing good work in the study of the cutaneous affections, and that it is not necessary to cross the Atlantic Ocean in order to learn dermatology. The references cited usually contain a fairly full bibliography. In addition, I have endeavored to give the views of the staff of dermatologists connected with the Johns Hopkins Hospital, but have of necessity drawn upon the splendid text books of Stelwagon, Pusey, Crocker, Hyde, Schamberg, Jackson, Whitfield, Walker, Unna, MacLeod, Kaposi, Darier, Sequiera, Hebra, Fournier and many others.

I have used some of the illustrations appearing in Ohmann-Dumesnil, and some loaned by Sutton, Gilchrist, Heidingsfeld, White, Howard Fox, and MacKee, but the vast majority are from photographs taken by me either in my own clinic or in the service of Dr. Gilchrist.

H. H. HAZEN.

Washington, D. C.

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INTRODUCTION

It affords me much pleasure to write an introduction to Dr. Hazen's text book on dermatology.

It is said that when one is at the most active age, mentally speaking, that is about forty years of age, a specialist is most capable of writing a text book, that is, if he ever intends to do so, and if he has the capacity of such an undertaking. Some writers are particularly endowed with a fluent and lucid style of presenting subjects to the reader; others are more rugged and original and reduce the presentation of the subjects to as short descriptions of diseases as possible.

A text book, to be of the most use to the practitioner, to whom ninety-five per cent are sold, seems to me ought to present in large type the most common aspects of the disease, and in smaller type the unusual and rarer variations of the lesions. Many good, clear photographs of the common types of cutaneous affections ought always to be included and very rare ones left out. A good, critical mind is very necessary in a writer so that he can give what is of most value to the practitioner and always be able to choose the wheat from the chaff from the mass of recent literature.

Dr. Hazen took his degree at the Johns Hopkins Medical School and was an assistant in the dermatological department for two years. During this time he carried out some important research work and published a number of valuable articles, so that he has had a good deal of experience as a dermatologist. He has always shown himself to be a careful, painstaking and thorough worker and is a good diagnostician. He gives much promise of producing even better work in the future. He has a critical and judicial mind, is at the proper age, and has had sufficient experience to write a good text book on dermatology.

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DISEASES OF THE SKIN

CHAPTER I.

ANATOMY AND PHYSIOLOGY.

Considered embryologically the skin consists of but two layers, the epidermis, which is derived from the epiblast, and the corium, which is derived from the mesoblast. The appendages of the skin, that is, the nails, hair, sweat and sebaceous glands are modifications of the epidermis.

Viewed with the naked eye the surface of the skin is everywhere transversed by ridges and furrows, which are of two kinds, the coarse and the fine. MacLeod¹ states that their existence is dependent upon three factors, the arrangement of the fibrous bundles and elastic tissues of the corium, the direction of the movement to which the parts are subjected, and the attachment of the skin to the deeper structures. The coarse furrows are most marked in the neighborhood of the joints, and are due to the folding of the skin when movement takes place. The fine lines exist over the entire body, and in certain places, as upon the palmar and plantar surfaces, have nearly regular patterns, differing however, in individuals. Over the rest of the body they correspond in direction to the so-called lines of cleavage.

Most of the skin is covered by a growth of hair, which is coarse in certain localities and fine in others. There are also the openings of the sweat ducts, which can sometimes be observed by noting the position of beads of sweat upon the surface.

The fully developed skin may be divided into the following layers: (1) the *stratum corneum* or horny layer; (2) the *stratum lucidum*; (3) the *stratum granulosum* or granular layer; (4) the *stratum malpighii* or prickle-celled layer; (5) the transitional or cuboidal cell layer; (6) the *stratum germinativum* or basal cell layer; (7) the *corium*; (8) the *subcutaneous tissue*.

The horny layer is the most superficial, and serves as a fairly efficient protection to the body, both against trauma and against chemical irritation and bacterial invasion. It is composed of epithelial cells which have become horny or keratinized. The cells near the

¹ MacLeod: Handbook of Pathology of the Skin, London, 1902.

surface receive but little nutriment and are constantly being shed. This layer is of varying thicknesses in different parts of the body, being especially thick upon the palms and soles, and being very thin upon the face in spite of constant exposure to the weather: it is also thin upon the flexor surfaces of the limbs. The individual cells are polygonal in shape, usually show vacuoles due to the loss of the nuclei, and stain intensely with the acid dyes because of the presence of keratin. The keratin can resist the action of strong acids for a considerable time, but is readily soluble in alkalis.

The *stratum lucidum* is probably best considered as the basal layer of the *stratum corneum*, and is of no particular pathological importance. The cells resemble those of the horny layer in shape, but are filled with eleidin, which substance also exists outside of the cells as well.

The *stratum granulosum* is usually composed of about three layers of cells, sometimes of but two, and is situated directly beneath the *stratum lucidum*. The cells are flattened, and are fairly closely packed, and the nucleus is plainly visible. While the cells sometimes contain prickles, still these are usually shrunken and often cannot be distinguished. According to Unna² and Waldeyer the granules with which these cells are filled is composed of keratohyalin, although many dermatologists still call it eleidin. From a pathological standpoint this layer of cells is of practically no importance.

The next layer is composed of the prickle or squamous cells, which are built up more or less like a mosaic, although the upper layers are slightly flattened. There are usually five to eight rows of these cells, which are large and each of which contains a central nucleus. The most characteristic feature of these cells are the bridges of protoplasm which run from the interior of one cell into the interior of the adjoining cells. The individual cells are square or hexagonal in shape, and stain with the basal dyes, although not as intensely as do the basal cells. These prickle cells give rise to squamous- or prickle-celled carcinoma, the most deadly type of cutaneous cancer.

The cuboidal cells lie between the prickle and basal cells, and consist of but one or two rows, and are to be regarded as basal cells that have not as yet assumed all of the characteristics of the more highly differentiated prickle cells. The cells are cuboidal in shape, are rather larger than the basal cells and lack fully developed intracellular bridges. Pathologically they are important because a type of cancer may develop from them that is midway in severity between the prickle- and basal-celled types.

² Unna: Histopathology of Diseases of the Skin, New York, 1906, Walker's translation.

The basal cells form the lowest layer of the rete. The cells consist of but one layer, and are oblong in shape, being arranged vertically to the basement membrane, if we consider that one exists. The nuclei

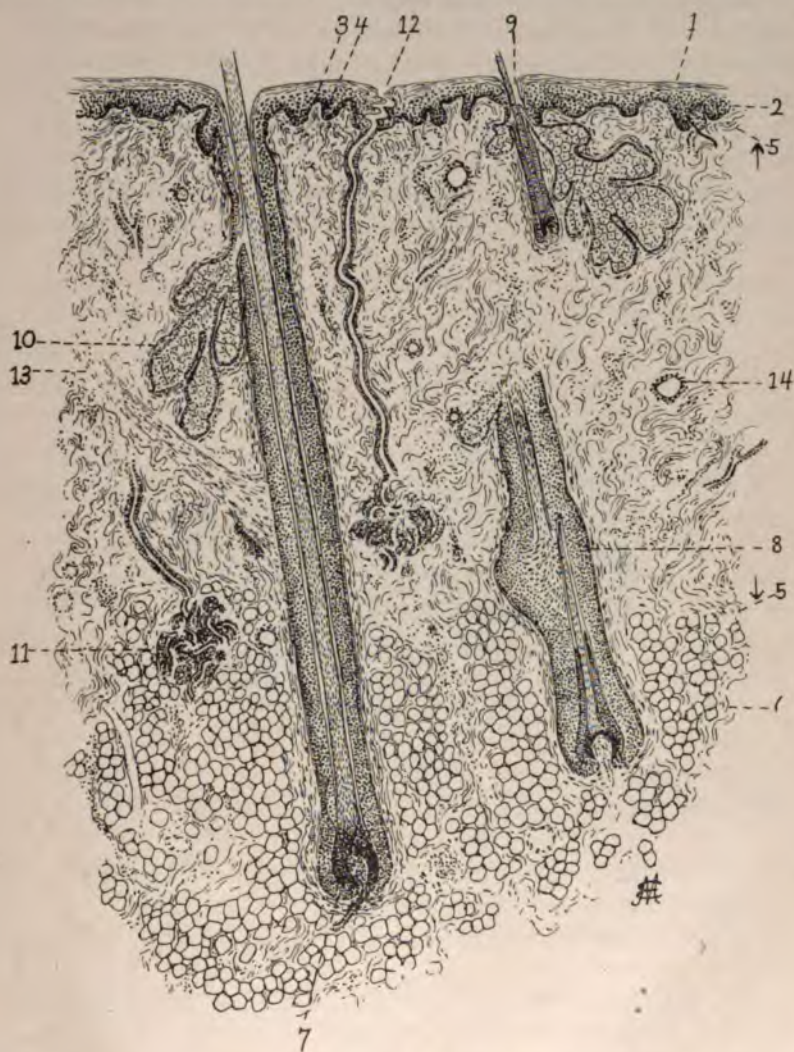


Fig. 1.—Semidiagrammatic drawing of a section of the skin from the hair margin. 1, horny layer; 2, rete mucosa; 3, papilla; 4, interpapillary process; 5, corium; 6, subcutaneous fat; 7, hair follicle; 8, hair follicle showing root hair below and bed hair above; 9, lanugo hair follicle; 10, sebaceous gland; 11, sweat gland; 12, sweat duct; 13, arrector pili muscle; 14, blood vessel.

occupy a central position. The cells may develop into basal-celled carcinomata or rodent ulcers.

In the white races the majority of the pigment exists in the basal layer, but in the dark-skinned races it may be found throughout the rete and in the upper part of the corium. It occurs in the form of fine granules of melanin. The origin of the pigment has not as yet been definitely determined. According to Dyson² there are a number of theories: (1) That pigment does not arise in the epithelium, but is manufactured from hemoglobin by special cells, termed chromatophores, and is conveyed by these cells from the cutis to the epithelium. (2) That cutaneous pigment originates in the epithelium, and is a product of epithelial cell metabolism; and that the cutis pigment is secondary to epithelial. (3) That epithelial and cutis pigment have

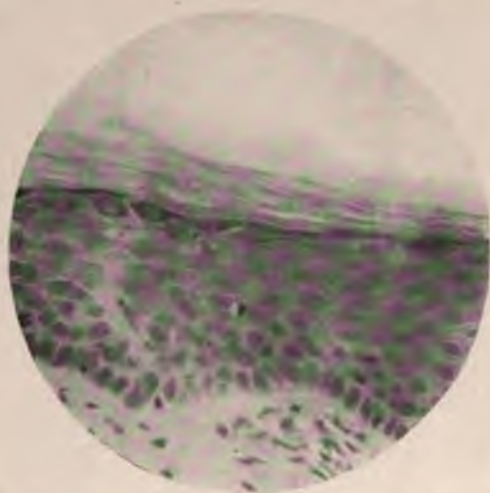


Fig. 2.—Oil immersion photomicrograph of the rete. The different layers of cells can be clearly distinguished, although the prickles do not show.

no connection with one another, but are formed by cell metabolism in the position in which they are found.

The line dividing the rete from the corium is not a straight one, but is wavy or crenate.

The corium is the layer of skin beneath the epidermis and above the subcutaneous fatty tissue. It consists primarily of white fibrous tissue, but also contains yellow elastic tissue, blood vessels and lymphatics, nerves and nerve endings, hair follicles and sebaceous glands, and sweat glands and sweat ducts. For convenience the corium is rather arbitrarily divided into two portions, the upper or papillary layer, and the lower or reticular layer. In the papillary layer the

² Dyson: Brit. Jour. Dermat., 1911, xxiii, 205.

bundles of fibrous tissue tend to be arranged in a vertical direction, while in the deeper layer they interlace, the long axes frequently being arranged horizontally, so that a meshwork is formed. It is well known that when a puncture is made in the skin with a round instrument the resulting wound is not round but is linear, due to tension of the fibrous tissue. The directions of these slits have been carefully worked out, and are known as the *lines of cleavage*, but are probably of no great importance from a pathological standpoint.

The papillæ are the finger-like projections of the corium that dovetail into the downgrowths of the rete. Most of them are richly supplied with blood vessels, but some contain sensory nerve endings and are poor in their vascular supply. In nearly all inflammatory diseases of the skin this portion of the corium is much involved. Transversing the upper part of the corium we have the hair follicles, and portions of the sebaceous glands, and the sweat ducts. Some muscular tissue may also be found. In the lower part we have the base of the hair follicles and the lower part of the sebaceous glands, and the sweat glands and ducts. Below there are prolongations of the fatty tissue.

The connective tissue cells are usually long spindle-shaped cells with an oblong nucleus, but the cells may be much shorter. They are probably formed from fibroblasts, which are at times difficult to distinguish from mononuclear leucocytes. Normally there are also found a few small round cells with a central nucleus and a few fixed tissue cells, which are commonest around the blood vessels. The tissue in the white fibers is called collagen. The yellow or elastic tissue is distributed throughout the corium, the fibers are slightly wavy, and may branch at various angles, so as to form a network throughout the entire corium. All of the appendages of the skin are surrounded by them. Their elasticity is not as great as has popularly been supposed, probably not equal to that of the white fibers. These fibers contain a substance known as elastin. They may be best demonstrated by the use of an acid orcein stain.

The hair follicles are simply downgrowths of the rete (Fig. 3), and contain many different layers of cells, which are not essential for the student of dermatology to remember. From within outward there is first an inner root-sheath which consists of three layers, the cuticle, Huxley's layer and Henle's layer; then comes the outer root-sheath which corresponds to the rete, and in which cuboidal and elongated cells may be recognized, the latter corresponding to the basal cells; then comes the dermis coat which consists of three layers, a vitreous or glassy layer, a middle transverse layer and an external longitudinal layer. The skin outlet is called the mouth or opening of the

follicle; just below this there is a constriction or neck where the sebaceous gland empties. The bulb is the dilated or lower part of the follicle. The hair itself consists of three portions, the cortex which

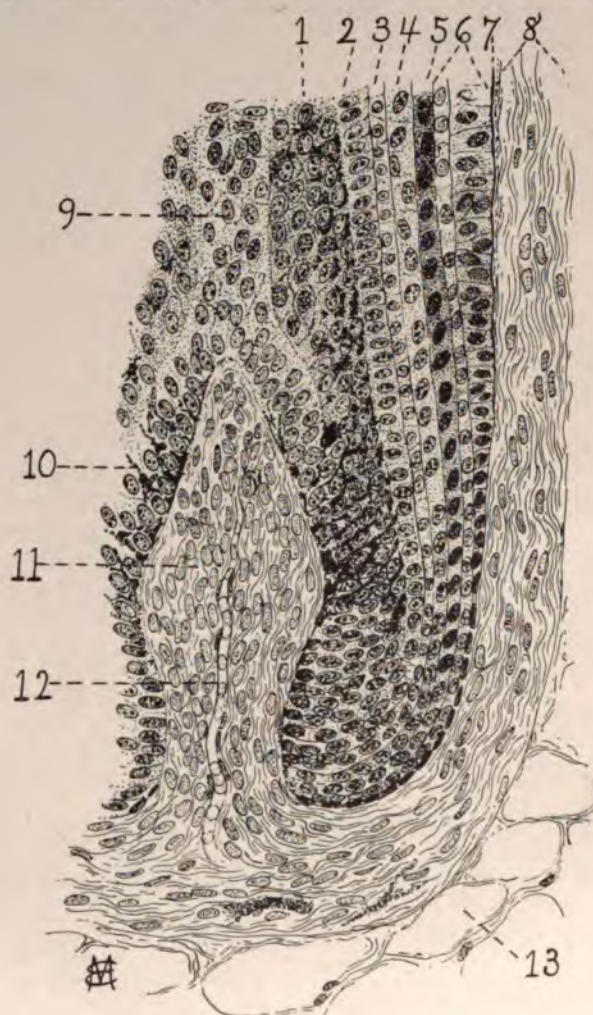


Fig. 3.—Semidiagrammatic view of the lower end of a hair follicle. (Redrawn after Rahl-Mracek.) 1, cortical cells; 2, cuticle of the hair; 3, cuticle of the follicle; 4, Huxley's layer; 5, Henle's layer; 6, external epithelial layer; 7, basal membrane; 8, connective tissue layer of follicle; 9, cells of the medulla; 10, matrix cells of the cortex; 11, papilla; 12, blood vessel.

comprises the bulk of the hair substance, the medulla which is the central portion near the root, and the cuticle which is a thin membrane covering the hair. The portion of the hair outside of the fol-

le is called the shaft, that within the skin is called the root. At the base of the hair is a deep invagination, the hair papilla, into which the connective tissue of the outer runs and supplies nourishment to the hair.

The sebaceous glands are racemose or acinous glands usually attached to the hair follicles, and whose walls are directly continuous with the different coats of the skin. They consist of a number of pouches which empty into a common duct. The glands also occur upon mucous surfaces where there are no hairs, as upon the lips and penis. The cells are large and fatty, but in diseased conditions readily degenerate so as to be almost unrecognizable.

The sweat glands are simple tubular glands, which lie in coils deep in the corium. They empty into the sweat ducts which traverse the corium in a more or less spiral way, enter the epidermis between the papillæ, and corkscrew their way to the surface. They are most abundant upon the palms and soles.

A few voluntary muscle fibers are found in the skin of the face. On the rest of the body there are many smooth muscle fibers which run from the rete to the hair follicles, and which when contracted cause the erection of the hair follicle, or "goose flesh" as it is popularly termed. The contraction of these muscles also aids in the expulsion of the contents of the sebaceous glands. There are also apparently a few smooth muscle fibers that have no connection with the hair follicles.

Both medullated and non-medullated nerve fibers are found in the skin. In addition to these sensory nerves there are also motor nerves. Certain of the sensory nerves penetrate the rete. However, all do not end in this way, for many terminate in definite sensory endings, of which there are several varieties: (1) The *Pacinian corpuscles*, also known as the corpuscles of Vater, are most numerous upon the fingers and toes and the palmar and plantar surfaces. They are small oval bodies composed of concentric layers, and are rather deeply situated in the skin. (2) The *tactile corpuscles*, also called the corpuscles of Meissner or of Wagner, are oval bodies and occur in the papillæ. They are most numerous upon the fingers. (3) *Corpuscles of Krause*, bulb-corpuscles, or end bulbs are chiefly found about the sensory mucous membranes. (4) *Merkel's touch-cells* are situated in the epidermis and upper portion of the corium. They occur where the tactile corpuscles are few in number, but are also numerous upon the finger tips.

There are two plexuses of blood vessels in the skin, the superficial and the deep. The former is situated just beneath the rete and the latter in the subcutaneous tissue. The deep plexus send branches to

the sweat and sebaceous glands and to the hair follicles, while the superficial supplies the papillæ. The arteries are small compared with the size of the veins.

There are also a superficial and a deep plexus of lymph vessels in the skin corresponding in a general way to the blood vessels. Lymph spaces are found throughout the corium and seem to be connected with the lymphatic vessels.

The subcutaneous tissue consists of a loosely arranged network of fibrous tissue which surrounds many fat cells. At times some of these fat cells form vertical lines extending a short ways up towards the epidermis.

The nails consist of two layers, the mucous or soft layer and the horny layer which comprises the nail proper. The nail bed is just beneath the nail, and the posterior end of this is the matrix from which the nail grows. The visible portion of the nail is called the body, while the posterior part beneath the skin is called the root. The thin skin that encroaches upon the nail is called the nail-skin or eponychium. The white crescent near the base is the lunula, and is due to a lessened translucency of the part. White spots are stated to be due to air between the lamellæ of the nail proper.

The following account of the hair is taken from the excellent work of Jackson and McMurtry⁴. Hairs are thread-like, more or less horny structures, somewhat similar to the nails. Their length varies, their diameter is from 0.15 to 0.32 millimeter.

Hairs can be divided into three main varieties:

1. Soft, long hair.
2. Short, stiff hair.
3. Lanugo or downy hair.

Soft, long hair is seen on the head, beard, pûbes and axillæ, and exceptionally on the midline of the trunk. Short, stiff hair occurs in the eyebrows and eyelashes, and the nose and ears. Lanugo hair is found upon all parts of the body except where the other varieties occur, and upon certain parts that are devoid of hair, as the palms and soles. "The term lanugo hair should be understood as referring to very small, fine, soft hairs with shafts of from one-tenth to almost one-half an inch in length, and characterized by a long tapering point." The shafts of these hairs contain no medullæ, and grow out of a rather rudimentary follicle. There is usually no erector pili muscle present, and the sebaceous gland is large.

When the hairs are found in the normal position, that is, with its seat upon the papilla, it is known as a "root hair" or papillary hair.

⁴ Jackson and McMurtry: Diseases of the Hair, New York, 1912.

On the other hand as a hair ages and before it is ready to fall it becomes loosened from the papilla and for a time imbedded upon the wall of the follicle (as shown in Fig. 1). It is then known as a "bed hair." Bed hairs are distinguished from root hairs by the absence of root sheaths, cuticles, and root medullas, and by having their pigment distributed in stripes and heaps. Before falling every normal hair should pass through this stage.

The skin has a number of functions—first, protection; second, regulation of the bodily heat; third, the elimination of waste products; fourth, as a sensory organ; fifth, a slight respiratory function; and lastly, a possible function of absorption.

As an organ of protection the skin is of the greatest importance. While the hair is doubtless a remnant of the heavy coating that once covered our ancestors, and protected them from cold and wet, at present it is of little protective value except to the scalp. On the other hand the horny layer of the skin is of the greatest value, inasmuch as it protects against all of the minor injuries and irritations of life. The fat forms a pad or cushion that protects the body just as the springs protect those riding in a carriage: in addition it aids in preserving the bodily heat, and in times of stress may act as a reserve food supply. In order that the skin may act as an efficient protection it must be kept covered with a thin coating of grease, as otherwise the water would soon be extracted by the atmosphere; the sebaceous glands supply this grease, and when it is kept removed from the surface it is noted that the skin speedily becomes rough and "chapped."

The capillaries in the skin act as regulators of the bodily heat in a very simple yet effective way. In warm weather they expand, more blood is brought to the surface, more oxidation takes place, and more heat is lost by radiation. In cold weather the vessels contract, the blood is kept in the interior of the body, and less heat is lost by radiation.

The elimination of waste matters through the skin is not as yet entirely determined. Water is lost in considerable quantities, nearly two quarts of sweat a day being excreted, more in hot than in cold weather. The composition of sweat is:

Water.....	98.8%
Solids.....	1.12%
Salts.....	0.57%
Sodium chloride.....	0.22% to 0.33%
Alkaline sulphates, phosphates, lac-	
tates, potassium chloride.....	0.18%
Fats, fatty acids, cholestrol.....	0.41%
Epithellium.....	0.17%
Urea.....	0.08%

At times certain drugs are also eliminated through the sweat.

The skin acts as the organ of touch, as already indicated.

As a respiratory organ the skin has but a slight function, some carbon dioxide being given off and some oxygen absorbed.

Strange to say it is not yet known what substances or how much of them are absorbed through the skin, although it is popularly believed that when incorporated in a greasy medium some may be taken into the body. However, certain experiments would seem to indicate that the heat of the body may vaporize them, and that they are then inhaled.

CHAPTER II.

ETIOLOGY.

In general it may be said that the etiology of skin diseases is not well understood. Dermatology has lagged somewhat in making use of the many recent advances in scientific medicine, but there are now many signs that it is coming into its own, and probably the next few years will see great strides in clearing up the etiology of many cutaneous diseases.

Certain malformations are either present at birth, or become manifest very shortly afterwards and are spoken of as congenital. The commonest of these are the vascular *nævi*, and various types of moles and fibro-epitheliomata. They are usually spoken of as "mother's marks." In other instances the skin may lack in the proper development of some of its essential parts. Epidermolysis bullosa is believed to be due to a lack of elastic tissue. Ichthyosis is usually congenital.

Some of the diseases due to local irritation will shortly be discussed under the heading of diseases due to occupation. This group is probably much more important than has been generally believed.

Very many diseases of the skin are due to local bacterial infection, the severity of the disease depending upon the resistance of the afflicted individual and the virulence of the strain of the infecting organism. Some cases of eczema unquestionably belong to this group, also such diseases as impetigo contagiosa, ecthyma, erysipelas, anthrax, glanders, boils, sycosis vulgaris, acne, tuberculosis, leprosy, etc.

Living vegetable organisms other than bacteria may cause many eruptions, the commonest being ringworm. Blastomycosis, actinomycosis, madura foot, sporotrichosis, favus and thrush are other examples belonging to this group.

Animals are often responsible for skin troubles, whether they live as parasites, or whether they merely bite the individual. In the first class belong the itch mite of scabies, and the various forms of pediculi, while in the latter group belong all of the biting insects, as flies, mosquitoes, gnats, ticks, etc.

Still other diseases are probably due to an infection of a still unknown nature, as erysipeloid, molluscum contagiosum, etc.

Certain other cutaneous maladies are primarily due to a systemic bacterial infection, the acute septic pemphigus being the best example of this type.

Syphilis and yaws are due to a generalized infection with spirœchætes.

Still other diseases are due to a generalized infection with an organism whose nature is still undetermined. In this group belong the eruptive exanthemata, Peruvian warts and possibly pellagra.

Many diseases are due to toxæmias of various kinds, some to drugs, some to serums and vaccines, and some to anaphylaxis against definite proteins. It is commonly stated that "autointoxication" is a common cause, but as Taylor has pointed out this is a very loose term, and one for which there is usually but little scientific foundation. It is probable that urticaria, erythema multiforme, purpura, erythema scarlatinoides and rosacea are due to some as yet unknown toxins. The number of drugs causing rashes is legion: there are two different varieties of these eruptions, those that come on rather promptly, and those that come from long continued administration.

Certain other diseases are due to circulatory disturbances, as gangrene from the occlusion of an artery, varicose ulcers from a retarded venous flow, and such others as acrocyanosis and Raynaud's disease which are none too well understood.

Nerve injuries or disease are very apt to cause atrophies of the skin, as in syringomyelia. The atrophic spots in leprosy are primarily due to nerve invasion by the lepra bacillus. In actual fact there is very little justification for the usual statement that many skin diseases are due to nervous influences: the probabilities are that the digestion may be upset by such influences and the general resistance of the body lowered.

There is a whole host of diseases of totally unknown etiology, such as psoriasis, lichen planus, and many others. Too many dermatologists have spent their time in describing variations of well known maladies as something new, rather than in searching for the cause of common ones. Specially must it be noted that as yet we do not know the cause of neoplasms, either benign or malignant.

In addition to the exciting cause there are other incidental factors that enter the causation of cutaneous diseases.

The age of the patient must always be taken into consideration. In the young we find certain diseases that do not frequently attack older persons. Practically speaking, ringworm of the scalp does not attack those above the age of puberty, tuberculosis of the skin rarely has its onset in those past twenty, acne is rare after twenty-five, impetigo is commoner in children, while cancer, sarcoma, xanthelasma and varicose ulcers are unusual in the young. These simple illustrations might be indefinitely prolonged.

The sex is also important; lupus erythematosus, acne rosacea, and

Paget's disease are commoner in women, while sycosis is seen only in men, and cancer of the skin is commoner in men than in women. Occupation often plays an important part, and hence one sex may suffer more than the other.

The race is often extremely important. In this country we usually find favus in the Italians, Huns or Russians and Kaposi's sarcoma in the Hebrews.

In those returning from the tropics a number of diseases, rare in America, must be suspected. Thus we must be on the lookout for leprosy, yaws, Oriental sore, pinta and various types of ringworm infection. Most of these diseases select no special race or sex, the prevalence of the disease being inversely proportional to the amount of care exercised in avoiding insect bites, and generally unhygienic surroundings.

Curiously enough none of the text books upon dermatology pay any attention to the dermatological peculiarities of the negro, certain points concerning whom are of the utmost importance not only to all dermatologists but to practically all general practitioners as well. At the beginning it is well to point out that during the days of slavery the negro was usually well looked after by his master, for he was valuable property, just as a horse or cow was valuable. On the other hand too little attention was paid to his moral development, and husbands and wives were sometimes separated by the auction block. After slavery was abolished the negro was free to live as he liked, and had no ideas as how to protect either himself or his race. The southern whites quite naturally frowned upon his material advancement as that seemed to them a prelude to political power: then too he was forced to share in the general post-bellum poverty of the south. As a result he was forced to live in the most wretched circumstances, often many to a room. Whiskey and cocaine speedily levied their tolls upon the race and have been the cause of much crime and much suffering. Even today his condition is none too good, for he is usually forced to live under the most unsanitary surroundings. As a result it is not surprising that disease is rife among the race, and that skin diseases are common. Of course, it must always be borne in mind that many negroes have been able to lift themselves above such a level, and live lives not materially different from whites of the same station.

The subject of skin diseases in the negro has been especially studied by both Howard Fox¹ and myself², whose conclusions in general agree. It is found that because of the color of the negro skin it is usually

¹ Fox: *Jour. Cutan. Dis.*, 1908, xxvi, 67, 109.

² Hazen: *Jour. Amer. Med. Assn.*, 1914, lxiii, 463. *Jour. Cutan. Dis.*, 1914, xxxii.

difficult for the beginner to diagnose cutaneous conditions, inasmuch as the play of colors cannot be well seen, so in chromophytosis, pityriasis rosea and other diseases the tyro is often hopelessly confused. But to one familiar with these diseases in the negro the diagnosis is nearly as easy as in the whites.

Generally speaking, the mulatto seems to be rather more susceptible to skin diseases than is the full-blooded negro. Also in negroes skin lesions have a greater tendency to become papular. In respect to many diseases certain racial peculiarities must be noted. The negro is not so frequently affected with the congenital malformations as is the white. Vascular nævi are rather rare, and moles are not as common as is often believed. Ichthyosis is certainly not a common disease. Fox believes that the negro's skin is more resistant to external irritants than is the white man's, and I am rather inclined to agree with him. Certainly the acute forms of irritant eczema are not so frequent. On the other hand poison ivy is about equally common in my experience, although most dermatologists do not grant this point. Sunburn is not common, and X-rays do not burn the skin as readily.

Diseases due to the common pyogenic organisms are not nearly so common as among whites, boils and abscesses are much rarer, and impetigo is not so severe. Tuberculosis is about equally prevalent in the two races. Concerning the rarer dermatoses there is not as yet sufficient evidence to speak with any degree of certainty. On the other hand the other vegetable parasites are rather commoner than among whites: this is especially true of *tinea tonsurans*, which is extremely prevalent. And yet *pediculosis capitis* is very rare, while the other forms of *pediculosis* are no more frequent.

Syphilis is certainly more prevalent than among whites. In a large series of cases both Fox and I found that the negro applies for treatment because of syphilis about one and one-half times as frequently as does the white, a fact probably explained largely by the conditions in which he dwells. Urticaria is very common, but strange to say neither erythema multiforme nor purpura is especially prevalent. Psoriasis is rare, and lichen planus infrequent. The mild type of rodent ulcer is almost unknown, and the prickle-celled type, while much commoner than the basal, is uncommon. This can probably be explained by the fact that even in the aged negro who has spent most of his life in the open, the senile degenerative changes in the skin as manifested by dry scaly spots are almost unknown. While the skin wrinkles and becomes dry, still it does so uniformly.

The occupation of the patient often predisposes to, or actually causes, many cutaneous troubles. Until a comparatively recent date but little attention was paid by dermatologists to such diseases, but

in the past few years hygiene has been making great strides; acts to compensate workmen, disabled in the course of their labors, have been passed, and in these studies it has been found that many skin diseases were directly due to external irritation of various kinds. This subject has been carefully studied by Blaschko³, Herxheimer⁴, Fordyce⁵, Knowles⁶ and myself⁷, while Schamberg⁸ has done good work in emphasizing the relationship of certain cases of skin cancer to the various tar products. Probably four to five per cent of all skin cases are due to external irritation from occupation.

Diseases due to occupation can be grouped under four headings: first, the diseases that are incited, or aggravated, or prolonged because of the influence of work upon the general health; second, what Blaschko is pleased to call the trade stigmata; third, the diseases accidentally acquired because work requires residence in some particular climate or country; and fourth and most important, the skin diseases that are directly due to the occupation of the worker.

1. In the first group may be placed certain cases of acne, rosacea, lupus vulgaris, eczema, urticaria and many other affections, all of which to some extent depend upon the general health of the individual. It is not at all unusual to find that as soon as the patient having any one of these afflictions gets a rest, or moves into better hygienic surroundings, the disease will spontaneously disappear. Eczema and other troubles will often resolve when a patient's bowels are regulated, and many sedentary occupations more than predispose to constipation. Eczema may be due to varicose veins, and become better when the leg is kept elevated.

2. The trade stigmata are not true diseases of the skin; rather are they the response of the skin to certain undue work thrust upon it, or due to the accumulation of stains. In this group may be put the callosities of those who do manual labor, the bronzing of those much exposed to the sun, and the staining of the skin from dyes, metal deposits, etc.

3. The diseases due to residence in some particular country are usually infectious in nature, and need only be mentioned. They include yaws, pinta, elephantiasis due to filaria, oriental sore, and similar affections.

4. The most important group consists of those diseases set up by

³ Blaschko: Gewerbliche Hautkrankheiten in Handbuch der Arbeiterkrankheiten, Weyl and Fischer, 1907.

⁴ Herxheimer: Deutsch. med. Wchnschr., 1912, xxxviii, 18.

⁵ Fordyce: Jour. Amer. Med. Assn., 1912, lvix, 2043.

⁶ Knowles: Jour. Cutan. Dis., 1913, xxxi, 11.

⁷ Hazen: Jour. Cutan. Dis., 1914, xxxii, 487.

⁸ Schamberg: Jour. Cutan. Dis., 1910, xxviii, 644.

the occupation of the patient, and usually due to some form of external irritation. The irritation may directly set up a dermatitis, it may cause a portal of entry for infecting organisms, or it may also furnish the organisms.

A. Mechanical causes are responsible for abrasions and bruises, as well as for callosities.

B. Abnormal heat may cause burns as in those who work over furnaces or with molten metals. Miliaria is common. Chilblain may result from working upon cold floors, or from out of door exposure.

C. Abnormal conditions in the relative humidity of the air may cause certain cutaneous troubles: those who work in steam sometimes suffer from hydrocystoma.

D. Changes in air pressure may cause purpura.

E. Light containing too many actinic rays may cause serious damage to either the skin or hair. Both X-ray and radium burns are now well known. Alopecia may result from too much exposure to sunlight. But the most deleterious effect of too much sunlight is the formation of senile keratoses, which so frequently become cancerous. Unna's "sailor's skin" comes under this heading.

F. Those who have to associate with people in the "slums" are apt to become infected with pediculi or itch mites. A straw mite, the *Pediculoides ventricosus*, is very troublesome to harvesters and farm hands.

G. Tinea tonsurans is usually acquired in the schools or in a home, while the deep form of ringworm, occurring on the hand or arm, is usually contracted around a stable.

H. Physicians, midwives, dentists and nurses may be infected with syphilis while in the line of their duties. Glass blowers may acquire the disease from an infected mouth piece of an instrument.

I. Impetigo is frequently contracted at school. Furuncles may be caused by work that stops the pores of the skin, as work in grease, sugar, aniline dyes, or where there is mineral or metallic dust. Glanders usually occurs in stable men, while anthrax affects those who handle hides, as in horse-hair and bristle workers, dock laborers, farmers, butchers, and meat inspectors. Small tubercles of the skin may occur in medical men, in butchers, cooks, etc.

J. Acute septic pemphigus occurs almost invariably among butchers. Erysipeloid comes from handling crabs, fish and occasionally meat.

K. The most important group of cases is that due to chemical irritation. In the order named the lesions run in frequency, irritant dermatitis, ulcer, cancer. Ulcers are especially apt to occur among chrome workers. They also form in those who work in hydrofluoric

acid, arsenic, or other strong acids or alkalis. Flax spinners are especially liable. Skin cancers occur in workers in paraffin and tar. Chimney sweeps formerly suffered from this type of cancer.

There are certain eruptions, of an eczematoid nature, associated with definite occupations. Herxheimer gives a list of seventy-four trades causing dermatitis. The following classes of workers may be mentioned: aniline dye, arsenic as in furriers and taxidermists, bakers, barbers, bartenders, bleachers and cleaners, borax workers, especially scrub women, bricklayers, bronze workers, canners, chemical workers, physicians, nurses, etc., cloth handlers, coopers, dyers, electroplaters, enamelers, flax workers, flour workers as millers, grocers and cooks, fruit handlers, furniture polishers, furriers, glass workers, gold refiners, grocers, hair dye makers and users, hat makers, houseworkers, icemen, ice cream men, laborers, lacquer workers, laundry workers, leather workers, linoleum makers, masons, match makers, mechanics, moving picture operators, mother of pearl workers, painters, paper hangers, paste handlers, photographers, plant handlers, plasterers, porcelain workers, printers, soap makers, sugar workers, tanners, tobacco workers and wood workers. Many common substances are intensely irritating to the skin, usually acting by removing the grease that is the natural protection of the horny layer: in this way soap, water, alkalis, alcohol and many chemicals act. However, some substances are directly poisonous to the normal skin, as ivy poison, arsenic, and caustics.

CHAPTER III. SYMPTOMATOLOGY.

There are, of course, two kinds of symptoms, the objective symptoms that the eye can see, and the subjective symptoms that the patient can feel. Then, too, it must always be borne in mind that there are local and general symptoms, and that the skin symptoms may be manifestations of general disorder, or that the skin lesions may be causing the general trouble.

Objective Symptoms.—Lesions of the skin assume certain forms, which are called primary lesions. These may be modified by scratching, secondary infection or treatment, and the resulting manifestations are called secondary lesions. In the first list are included macules, maculo-papules, papules, vesicles, bullæ, pustules, nodules, wheals and tumors. The second group comprises scales, crusts or scabs, excoriations, fissures, ulcers, scars and stains.

Macules are circumscribed, discolored patches of varying shapes and sizes, and cannot be felt. To determine whether or not a spot is inflammatory press down upon it with a glass slide and see if the color fades, as it will do in all conditions due to vascular engorgement. Macules are not alone due to circulatory disturbances, but also to hæmorrhages, pigment deposits and stains.

Maculo-papules are wheal-like lesions, which are not transient like wheals, but which constitute a transitional stage between macules and papules.

Papules are circumscribed elevations of the skin, of various sizes and shapes, and which are not over one cubic centimeter in diameter. They can be distinctly felt. They may be superficial or deep seated, and in shape conical, rounded, or flat. In studying their contour it will be seen that they are usually nearly round, but that they may be angular as in lichen planus. When situated around the hair follicles they are spoken of as follicular.

Vesicles are circumscribed lesions in which the superficial layers of the epidermis are distended by serum. They are usually described by the laity as "water blisters."

Bullæ are similar to vesicles except in size, being over one cubic centimeter in diameter. They are also called blebs.

Pustules are discrete lesions in which the upper portion of the skin is elevated by a purulent exudate. They are either rounded or

acuminate, and may be either superficial or deeply seated. They frequently develop from either papules or vesicles. The hair follicle is often the seat of the trouble in pustular lesions, bacteria gaining entrance to the skin through the opening.

Wheals or *pomphi* are œdematous, more or less circumscribed, irregular, pinkish or whitish elevations of the skin that are transitory in character.

Nodules are circumscribed, solid, rather deeply seated lesions of the skin, over one cubic centimeter in diameter.

Tumors are variously sized and shaped, more or less circumscribed growths of tissue, usually having their main bulk in or below the corium, but also springing from the epidermis. They are divided into solid and cystic tumors, according to whether they are solid or hollow

The secondary lesions comprise the following:

Scales are masses of exfoliating epidermis, and are composed of dead epithelial cells.

Scabs or *crusts* must be distinguished from scales. They are composed of dried masses of fibrin and serum, usually with the admixture of a few epithelial cells.

Excoriations are in common parlance scratches, or superficial losses of epidermis due to traumatism.

Fissures or *rhagades* are linear cracks or injuries of the epidermis, usually due to diseases but occasionally to injury.

Ulcers are lesions in which there is loss of tissue below the epidermis, and are usually round or have rounded edges.

Scars or *cicatrices* are new formations of connective tissue, covered by epidermis, which have replaced loss of these tissues.

Pigmentations are deposits of pigment left in the skin, sometimes spontaneously, and sometimes after disease or injury.

Subjective Symptoms.—The subjective symptoms are itching, burning, smarting, formication, tingling, tenderness and pain. There may also be disturbed sensation, as partial or complete anæsthesia. Itching is the commonest symptom, and may be of any grade of severity: it has even been known to cause patients to commit suicide. Very frequently it causes much loss of sleep and then may become serious. Itching may be constant, or may occur at some particular time of the day, or after performing some particular act. For instance washing nearly always aggravates to itching of eczema. Formication is rather rare, and is usually described by a patient as follows: "It feels as though ants were crawling over me." Tenderness and pain are usually associated with neoplasms, infections, and many of the inflammatory diseases.

In studying a patient it is absolutely essential to make note not only of the local symptoms but of the general symptoms as well. In clinical work, and too often in private practice, only a cursory local examination is made, whereas if a more general examination were made the true nature of the trouble would become manifest. This is of so much importance that a few examples must be given. Itching may be due to jaundice, various eruptions may be due to leukæmia, elephantiasis of the leg to pelvic tumor, and, as we all now know, a whole host of eruptions to syphilis.

But also, as already pointed out, not only are skin eruptions due to some systematic trouble, but general manifestations may also be due to cutaneous trouble, either because of the absorption of toxins, or because of the nervous influence of an unsightly eruption. I recall one case of periodic attacks of migraine and vomiting which ceased entirely as soon as an indurated acne was cured. Many times it is impossible to get a patient to lead a normal and proper life until the skin trouble is cured so that he will not dread meeting strangers. We all know what an influence the digestive system has over the general health of the patient and hence over the condition of his skin as well. Many cutaneous troubles are certainly associated with, if not caused by, constipation or indigestion. Likewise the nervous system has a powerful influence over the skin, and its condition should always be known.

CHAPTER IV.

PATHOLOGY.

In studying the pathology of the skin a broad knowledge of general pathology is absolutely essential, for the lesions here are much like those in other portions of the body. In addition to this it is necessary to understand accurately the structure of the skin, and something of its physiology and chemistry. To obtain material for study the usual methods should be employed. The tissue is best excised with a sharp knife under local anæsthesia, Schleich's solution usually being satisfactory. In the case of suspected malignancy, or of certain of the more severe vegetable parasites such as blastomycosis, the excision should either be made with the actual cautery, or the wound at once sealed with the cautery or a caustic, to prevent the escape of any of the diseased elements into the gaping blood vessels or lymphatics. The tissue may be preserved in either alcohol, formalin, or some of the other fixing reagents. It can be hardened, blocked, mounted, cut and stained in the usual way; hæmatoxilin and eosin are probably the most satisfactory combination of stains for routine use. Such tissue should always be examined by one accustomed to cutaneous pathology or by a very expert general pathologist.

Inflammation.—Inflammation in the skin almost exactly resembles inflammatory processes in other portions of the body. There is first hyperæmia, with some exudation of serum, producing œdema, then an extravasation of white blood cells, usually a multiplication of some of the fixed tissue cells, and changes in cell protoplasm. This process is of varying grades of severity and of varying durations, restitution to normal depending upon the amount of damage done. In many of the inflammatory diseases of the skin there are found very few polymorphonuclear leucocytes, the majority of the cells being small mononuclears of one variety or another. In some of the chronic inflammations many plasma cells are found: plasma cells are oval-shaped cells, somewhat larger than a small lymphocyte, and with a non-granular protoplasm, and a round nucleus near one end. At times these cells are found with either acidophilic or basophilic granules in their protoplasms according to Adami. Mastcells, that is, cells with large irregular granules taking a basophilic stain, occur in some inflammatory conditions: they are especially marked in urticaria pig-

mentosa. Eosinophiles are also found at times, just as in other parts of the body. At times the inflammatory cellular exudate is most marked around the blood vessels, this being especially true of syphilis. Giant cells are found in many of the chronic infectious processes, as syphilis, tuberculosis, and even acne: it cannot be repeated too often that the finding of giant cells does not make certain the diagnosis of tuberculosis. In all acute infectious processes the trouble is apt to be at first localized at or near a hair follicle.

Hyperæmia.—Transient congestion, such as blushing, is common, and is due to stimulation of the vasodilator nerves. Congestion may also be due to circulatory disturbances, where there is a retarded venous return of the blood, such as occurs in varicose veins, or in some cases of heart or kidney trouble.

Anæmia.—Cutaneous anæmia is produced by either a general

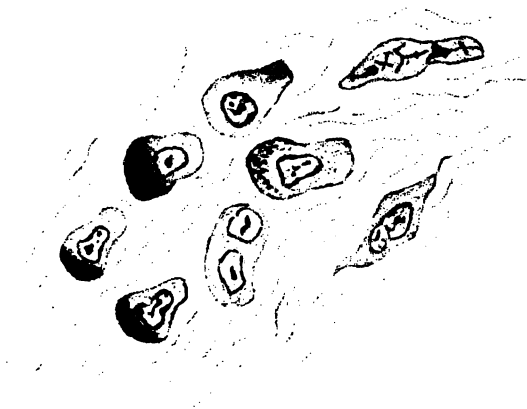


Fig. 4.—Plasma cells. (Redrawn after MacLeod.)

anæmia or by a constriction of the cutaneous blood vessels, due to stimulation of the constrictor nerves, or by injury to the artery supplying the part.

Edema of the skin may be of mechanical origin, where the return flow of the blood lymph is obstructed. Edema accompanies all acute inflammatory processes. In such conditions as urticaria its causation is still under dispute. It is generally attributed to nervous influence, but Gilchrist seems to have shown definitely that it is always accompanied by evidences of an acute inflammation, and suggests that it must be toxic in character, the toxin acting directly upon the blood vessel walls.

Hæmorrhage.—In practically all inflammatory exudates there are found a few red blood cells, but in certain diseases, commonly called

the purpuras, these are so common as to produce hæmorrhagic lesions. When a blood vessel is ruptured, by violence or otherwise, a similar effect is also produced. These lesions usually disappear without any damage to the skin, but may cause gangrene. Purpura is probably due to toxic influences, of a severity rather greater than those simply causing œdema or inflammation. It is interesting to note that where there has been much hæmorrhage, continued over a considerable space of time, much of the pigment may remain in the tissue, and I have seen two cases where even upon microscopical examination it was impossible to tell whether the lesion was a malignant melanoma or a chronic inflammation with pigment deposits.

Vesicles, Bullæ, Pustules.—All of these different types of lesions are formed in the same essential way. The presence of serum in the epidermis causes either a rupture or separation of the cells, the resulting cavity being filled with serum, which may or may not become purulent. Two factors necessarily enter into vesicle formation, first the amount of pressure and second, the cohesive properties of the cells. Vesicles may form directly beneath the horny layer as in impetigo, in the rete as in eczema, or occasionally just beneath the rete. Vesicles contain serum, fibrin, and cellular elements, sometimes derived from the blood, and sometimes from the tissue. A vesicle may terminate in one of three ways, first by absorption, second by rupture and third by pustulation. Bullæ are simply large vesicles, while pustules are practically the same, there simply being an increase in the number of polymorphonuclear leucocytes.

Pustules usually result from bacterial invasion, but may also be produced by certain irritants such as croton oil. Vesicles usually result from bacterial invasion or the application of irritants, such as poison ivy, but may also result from lesions of the nerves as in herpes zoster.

Acanthosis is the term applied by Unna to a true hypertrophy of the prickly layer, such as occurs in many benign new growths of epithelial origin. The horny layer may be thickened, but the basal layer remains normal. This condition is also very common in chronic infections. The intra-papillary processes usually become much elongated, and the papillæ become elongated. The term papilloma is often applied to these conditions, but erroneously as Unna has pointed out.

Hyperkeratosis is a condition in which there is a true hypertrophy of the horny layer. Corns and callosities are common examples of this state.

Parakeratosis is a condition in which there is an imperfect cornification. MacLeod states that the essential features of parakeratosis are (1) persistence of the nuclei in the horn cells; (2) incomplete

formation of keratin so that the cells are loosely united; (3) moistness of the horn cells.

Dyskeratosis is a condition in which partially cornified cells may undergo degenerative changes, as in molluscum contagiosum.

In writing up the *pathological report* of a piece of tissue a certain system is usually followed. As a general rule the horny layer is first described, then the granular layer, then the prickle-celled layer and finally the basal-celled layer. At first the general relationship of each layer is noted, and then its finer changes. In the corium the same thing is done, first noting the general conditions and then describing them minutely, always mentioning the condition of the appendages, the blood and lymph vessels, and the character of the exudate, if there be one. The student of cutaneous pathology should own both MacLeod's and Unna's books.

Blood Changes in Diseases of the Skin.—In certain of the local diseases of the skin eosinophilia is common. It is found in various groups of diseases, probably being most marked in dermatitis herpetiformis, but also occurring in eczema, purpura, urticaria, and even in scabies. Much more work needs to be done upon this point, although the studies of Schamberg¹, Engman² and myself agree in general. The most striking point to my mind is the absolute lack of uniformity in the blood picture, under almost identical conditions.

¹ Schamberg: Jour. Cutan. Dis., 1912, xxx, 53.

² Engman and Davis: Jour. Cutan. Dis., 1915, xxxiii, 73.

CHAPTER V.

DIAGNOSIS.

In order to treat a skin ailment and obtain a cure, it is first necessary to make a proper diagnosis. Contrary to popular opinion the diagnosis of the majority of cutaneous ailments is not difficult if the physician goes about his work in a systematic way. The following scheme is based upon the system that Gilchrist uses in the Johns Hopkins Hospital, but the key is of my own devising.

The patient should always face the light so as not to be shaded: strange as it may appear this is one of the most difficult points to teach students. First the history should be taken, laying emphasis upon the following points: First, the duration of the disease, and the history of any previous attacks; second, the question of contagion; third, the age, sex and occupation; fourth, the general symptoms as rheumatism, falling hair, sore throat, bone pains, indigestion, constipation, nervousness, and if syphilis be suspected, miscarriages; fifth, the seasonal incidence; sixth, the subjective symptoms; seventh, the course of the disease.

Then the patient should be systematically examined in a routine way, usually starting with the head, noting the hair, eyes, teeth, throat, mucous membranes and the glands of the neck. The hands and nails, and the genitalia of men should always be examined. The lesions should be described in a routine way. We should first search for the primary lesion, and determine whether it be macular, papular or vesicular. Then the distribution should be accurately determined by examination and not by taking the word of the patient. The secondary lesions should also be noted. Note the number and size of the lesions, their color, shape and arrangement. Are they situated around hair follicles, are they discrete or do they become confluent, are they smooth or scaly? Note whether they spread centripedally or centrifugally, and whether one type of lesion evolves into another, as a papule into a pustule. Are the lesions moist or dry, and do they show a tendency to clear up in the center?

In doubtful cases it is often essential to have a complete physical examination made, including examination of the urine and blood. Often the microscope is called into play, sometimes to demonstrate ringworm parasites, sometimes tubercle or leprosy bacilli, and sometimes to decide the question of malignancy. Cultures are often taken

to determine the infecting organism, and sometimes animal inoculations are made, especially if tuberculosis be suspected. The Wassermann is often an invaluable aid in clearing up a diagnosis of syphilis. In fact to diagnose a difficult case one must have a wide knowledge of medicine, both practical and scientific.

The following simple key has been of the greatest aid to my students in diagnosing dispensary cases. It is used just as the keys in botanies or in popular bird books are employed:

A. Macular Lesions, Not Scaly.

1. Lighter in color than the normal skin.
 - a. Syphilitic leukoderma, usually on the neck in women.
 - b. Leukoderma, lesions very white, often with a dark border.
 - c. Leprosy, lesions anæsthetic.
 - d. Scars.

2. Darker in color than the normal skin.

Lesions usually numerous.

Not fading when a glass slide is pressed upon them
—not erythematous.

- a. Pigment from old lesions of any kind.
- b. Purpura, usually of a purplish color and on legs.
- c. Freckles, usually on face or hands.

Fading when a glass slide is pressed on them—inflammatory.

- a. Syphilis, no itching, usually widespread, pale color.
- b. Drug eruptions, usually itch, bright color, widespread.
- c. Measles, acute, coryza, Koplik's spots, fever.
- d. German measles, lesions pale, swelling of glands of neck, lesions transitory.
- e. Scarlet fever, lesions very red, usually confluent, angina, constitutional symptoms.
- f. Erythema multiforme, usually on face or hands, history of previous attacks, little itching.

Lesions usually few in number.

Not fading under pressure.

- a. Chloasma, usually on faces of women.

Fading under pressure.

- a. Angioma or birth marks—persistent.
- b. Erysipelas, lesions tense and purple, fever, rapid spread.

- c. Erysipeloid, lesions resemble erysipelas, but occur on hands after handling fish or crabs.
- d. Intertrigo, between opposing surfaces of skin.
- e. Rosacea, on cheeks and nose, chronic, dilated blood vessels present.

B. Macular Lesions, Scaly.

1. Lesions usually numerous.

Not fading under pressure.

- a. Tinea versicolor, lesions fawn-colored, on chest and shoulders, small and numerous, but becoming confluent.
- b. Erythrasma, usually in groins or axillæ, brownish.

Lesions fading under pressure.

- a. Syphilis, in its resolving stage.
- b. Drug eruptions.
- c. Measles.
- d. Scarlet fever.
- e. Pityriasis rosea, lesions oval-shaped, clearing in center, long axis of lesion parallel to ribs.
- f. Seborrheic eczema, lesions purplish or yellowish red, not much indurated, usually on midline of trunk or axillæ.

2. Lesions usually few in number.

Fading under pressure.

- a. Rosacea, nose and cheeks affected, dilated vessels present.
- b. Ringworm, usually clearing in center.
- c. Pityriasis faciei, seborrhea of face, chronic, whitish or reddish, oval, clearing in center.
- d. Erythematous eczema, usually acute, much itching.
- e. Intertrigo.
- f. Seborrheic eczema, patches purplish or yellowish, no deep induration, situated on midline of trunk, or in axillæ or groins.

Not fading under pressure.

- a. Ichthyosis, universal, congenital.

3. Wheals.

- a. Urticaria, produce others by stroking skin.
- b. Insect bites, central puncture.
- c. Erythema multiforme, more persistent, usually worse on arms.

*Papular Lesions.**A. Lesions Flat or Rounded.*

1. Lesions becoming confluent.

- a. Eczema, usually much itching, usually not wide spread.
- b. Psoriasis, on extensor surfaces primarily, often on scalp, soon becomes covered by profuse whitish scales that leave bleeding points on removal.
- c. Lupus erythematosus, usually on face, produces scars without ulceration, chronic.
- d. Lupus vulgaris, lesions soon ulcerate with undermined edges.

2. Lesions discrete.

- a. Syphilis, widespread, usually no itching, usually scaly.
- b. Small-pox, acute fever, backache, soon become pustular, more on face than elsewhere, lesions shotty and hard.
- c. Measles, rare, coryza, fever and Koplik's spots.
- d. German measles, spots of short duration, cervical glands enlarged.
- e. Psoriasis, lesions predominate on extensor surfaces and on scalp. Many white scales, which leave bleeding points when removed.
- f. Eczema, rare, the lesions usually becoming confluent.
- g. Lichen planus, lesions angular, arranged in rows, often umbilicated, purplish tinge.
- h. Erythema multiforme, usually on hands, arms or face, never scaly.
- i. Aene vulgaris, on face or back, look for blackheads.
- j. Warts, usually horny.

B. Lesions Acuminate.

- a. Syphilis, widespread, other signs of syphilis, no itching.
- b. Measles, very rare.
- c. Eczema, usually on arms or legs, much itching, usually in small patches, the lesions tending to become confluent.
- d. Keratosis pilaris, usually on arms or legs, horny plugs in follicles, no itching.
- e. Scabies, lesions between fingers and on wrists, lower abdomen and thighs as well as on flexor surfaces of arms. Intense itching, worse at night.

*Nodular Lesions or Tumors.**A. Lesions Numerous.*

- a. Syphilis, other signs of syphilis, suggestive history, or positive, Wassermann.
- b. Leprosy, leontine expression, thickened nerves, acid fast bacilli.
- c. Yaws, not indigenous to the United States.
- d. Erythema nodosum, on legs, very inflammatory.
- e. Sarcomatosis, proven by biopsy, or evidences of metastasis.
- f. Fibromata, lipomata, neuromata, keloids.

B. Only One or Two Lesions.

- a. Carcinoma.
- b. Sarcoma, lipoma, fibroma, keloid, cyst, wen, etc.
- c. Lymphatic gland.
- d. Gumma, history or other signs of syphilis.

*Vesicular Lesions.**A. Lesions Widespread Over Body.*

- a. Congenital syphilis, other signs of syphilis, syphilis in parents.
- b. Impetigo contagiosa, rather unusual, acute, thick crusts soon form.
- c. Chicken-pox, acute, often an inflammatory areola, lesions in crops, most marked on body.
- d. Dermatitis herpetiformis, history of previous attacks, pigment left from old lesions, great itching.
- e. Pemphigus, rare, chronic, usually a fatal termination.
- f. Scabies, typical distribution.
- g. Drug rash, acute, itching, history or drug taking.
- h. Eczema, usually associated with asthma or pregnancy, rare.

B. Lesions Confined to a Small Portion of Body.

- a. Eczema, common, oozing, itching, made worse by bathing.
- b. Dermatitis venenata, usually on hands, face or extremities, lesions often arranged in rows. Much burning and itching.
- c. Herpes simplex, usually on face or genitalia, burning, a small group of vesicles upon an inflamed base.
- d. Herpes zoster, groups of vesicles upon inflamed bases, follow distribution of a cutaneous nerve.
- e. Impetigo contagiosa, usually on face or scalp, speedily rupture, and "stuck on" scabs appear, acute.

- f. Erythema multiforme, usually on legs, or hands and arms, symmetrical, history of previous attacks.

Pustular Lesions.

A. Lesions Widespread Over Body.

- a. Syphilis, fairly common in negroes, acute, no itching, other signs of syphilis.
- b. Drug rash, itching, history of drug taking.
- c. Small-pox, lesions predominate on face, acute.
- d. Acne vulgaris, lesions predominate on back or face, chronic, blackheads present.

B. Lesions Confined to a Small Portion of Body.

- a. Impetigo, acute, usually predominate on face, "stuck on" scabs.
- b. Ecthyma, usually on legs, no deep ulcer beneath scab, wide inflammatory areola.
- c. Impetiginous eczema, usually on the faces or scalps of children, often considerable itching.
- d. Ringworm, rather uncommon, on scalps or exposed surfaces.
- e. Sycosis, either due to ringworm or pus cocci, always around hair follicles, on any portion of body.
- f. Furuncles, boils, carbuncles, etc.
- g. Acne vulgaris, on either back or shoulders or face, blackheads.
- h. Blastomycosis, lesions verrucose.
- i. Syphilis, broken-down gummata.

Ulcers.

- a. Varicose, usually near ankle, varicose veins present.
- b. Syphilitic, "punched out," anywhere on body.
- c. Chancre, rolled edge, neighboring glands soon enlarge.
- d. Tuberculosis, usually in patients under 20, slow progress, ulcers have undermined edges.
- e. Cancers, hard rolled edge, in people past middle life, chronic.
- f. Traumatic, usually acute, but may be chronic, history of trauma. Usually heal well under local dressings.

Diseases Producing Scar Tissue.

- a. Syphilis, either gummata or nodular lesions.
- b. Tuberculosis, slow progress, onset early in life.
- c. Lupus erythematosus, scar tissue without ulceration.
- d. Erysipeloid, hard edge, in adults, slow progress.
- e. Pyogenic infections.

Diseases Forming Ringed Lesions.

- a. Syphilis, usually in the negro, common on face.
- b. Ringworm, parasite found with microscope.
- c. Psoriasis, chronic scaly patches, usually predominate on extensor surfaces.
- d. Erythema multiforme, usually on hands and forearms.
- e. Pityriasis rosea, acute, predominate on body, oval-shaped patches, clearing in center, with long axes parallel to direction of ribs.
- f. Pityriasis faciei, dry seborrhœa of face, chronic, whitish slow-growing patches on face.
- g. Seborrheic dermatitis, patches red, usually in axillæ or groins, some itching, lesions superficial, seborrhœa elsewhere.

Diseases Causing Universal Itching.

- a. Urticaria, try to produce a wheal artificially.
- b. Scabies, itching worse at night, typical distribution, no itching on face, except in babies, usually history of contagion.
- c. Pediculosis corporis, long scratch marks between the shoulder blades, parasites in the seams of the underclothing.
- d. Pruritus, only when the itching is due to none of the others.
(It is to be noted that eczema does not cause universal itching, a point that students rarely remember.)

Diseases Producing Verrucose Lesions.

- a. Common warts, lesions discrete and horny.
- b. Verrucose dermatitis or eczema, rather rare, follows a persistent irritation, lesions soft and confluent.
- c. Verrucose tuberculosis, not uncommon on the hands, and occasionally seen on other parts of the body. The only sure way to make the diagnosis is to demonstrate the tubercle bacillus.
- d. Blastomycosis, usually a number of miliary abscesses both in and around the lesion, in the contents of which the causative organism may be demonstrated.
- e. Carcinoma, usually of the prickle-celled variety, can be told by the extremely hard edge and the deep induration.

Common skin diseases are frequently found in the following regions:

Upon the scalp may occur eczema, seborrhœa and seborrheic dermatitis in its various forms, psoriasis, ringworm, favus, pediculosis, impetigo contagiosa, sycosis of various kinds, furuncles, alopecia of different types, wens, warts, and malignant tumors.

Upon the face may occur freckles, chloasma, leucoderma, acne

vulgaris, erysipelas, impetigo contagiosa, erythema multiforme, rosacea, lupus erythematosus, lupus vulgaris, syphilis, epithelioma, milium, herpes simplex, herpes zoster, and nævi, and eczema.

Upon the eyelids are commonly found milium, xanthelasma, eczema and basal-celled carcinomata.

Upon the eyebrows are found seborrhœa, alopecia areata, sycosis and syphilis.

Upon the ears the commonest diseases are eczema, lupus erythematosus, lupus vulgaris, syphilis and carcinoma.

Upon the bearded region are met sycosis parasitica, due to the ringworm parasite, sycosis non-parasitica due to staphylococcus, eczema, impetigo, cancer and syphilis.

The lips are liable to be afflicted with herpes simplex, eczema, erythema multiforme, chancre and epithelioma.

On the neck we encounter commonly: eczema, furuncles, boils, acne, ringworm, tinea versicolor and in negroes keloidal sycosis. Syphilitic lesions are also common, while cancers are occasionally met with.

The common diseases of the shoulders are: acne vulgaris, syphilis, pediculosis corporis, herpes zoster, tinea versicolor, seborrhœic dermatitis, eczema and pityriasis rosea.

Upon the chest appear the acute exanthemata, syphilis, acne, tinea versicolor, herpes zoster, pityriasis rosea, seborrhœic dermatitis, eczema, psoriasis, scabies.

Upon the abdomen are found eczema, syphilis, scabies, tinea versicolor and pityriasis rosea.

On the sides of the trunk we encounter herpes zoster, scabies, pityriasis rosea, syphilis and pediculosis corporis.

On the buttocks: scabies, furuncles, and of course eczema and syphilis.

On the genitalia the most important diseases are: eczema, herpes simplex, scabies, chancres, pruritus, syphilis and venereal warts, pediculosis pubis, tinea cruris and seborrhœic eczema.

On the thighs are found tinea cruris, eczema, scabies, syphilis and eczema.

Upon the legs: varicose ulcers, syphilis, eczema, purpura, erythema nodosum and multiforme, psoriasis and elephantiasis.

On the hands and forearms are commonly found: eczema, dermatitis venenata, scabies, pellagra, erythema multiforme, leucoderma, syphilis and warts.

Upon the elbows and knees we commonly see psoriasis, ichthyosis, scabies, eczema and pellagra.

Upon the palms and soles may be found eczema, syphilis, psoriasis, keratoses, pompholyx, scabies and warts.

It will be noticed that practically all of the rules so far laid down apply only to the common conditions. The following rare diseases are usually papular in onset: urticaria pigmentosa, pityriasis rubra pilaris, molluscum contagiosum, xanthoma, leprosy, mycosis fungoides, prurigo, granuloma annulare, lichen scrofulosus, and various of the neoplasms.

Among the rarer macular diseases are: leprosy, dermatitis exfoliativa, xeroderma pigmentosum, mycosis fungoides, morphœa, scleroderma, and ichthyosis, also cyanosis of various types.

The rare pustular diseases are: impetigo herpetiformis, anthrax, glanders, sporotrichosis.

Among the rare vesicular diseases may be mentioned: pemphigus, hydroa vacciniforme, epidermolysis bullosa, while occasionally certain of the common diseases may assume a rare vesicular form as lichen planus and pityriasis rosea.

While short cuts to diagnosis are usually dangerous, still there are a few general rules that will often aid in making a diagnosis, at least remembering them will enable the physician or student to exclude the probabilities. These rules are:

1. Bald patches on a child's head usually denote ringworm.
2. Pustular lesions about the scalp, and especially about the back of the neck where there are no blackheads, usually mean pediculosis of the scalp.
3. Discrete, superficial, vesicular or pustular, frequently scabby lesions on a child's face and hands, totally unaccompanied by fever indicate impetigo contagiosa.
4. Moist, itching patches back of the ears mean eczema.
5. Scratch marks on the posterior surfaces of the shoulders often mean pediculosis corporis.
6. Excoriations or ulcers which apparently heal, only to break down again, on the faces of those past middle life usually mean carcinoma.
7. Discrete papules, vesicles or pustules, between the fingers, on the flexor surfaces of the arms, over the abdomen, buttocks and thighs, and on the genitalia of males mean scabies.
8. Circular, whitish lesions, on the faces of negroes, especially at the angles of the mouth or eyes usually denote syphilis.
9. Hard nodules of the lips, in young people, with rapidly enlarging cervical glands usually are chancres.
10. Hard, slow-growing lesions of the lips in elderly people are usually cancers.

11. White, scaly, inflammatory patches on elbows and knees usually mean psoriasis.

12. Discrete, reddish, ringed lesions of the hands and forearms are usually due to erythema multiforme.

13. Weeping, crusted patches on a baby's face denote eczema.

14. Small, discrete, purplish patches on the legs usually are purpura.

15. Fawn-colored, discrete but becoming confluent lesions, on the chest and shoulders that do not itch usually mean tinea versicolor.

16. Scaly, discrete, brownish patches on the faces of old people mean senile keratoses, that are very prone to end in cancer.

17. Yellowish patches on the eyelids of women mean xanthelasma.

CHAPTER VI.

TREATMENT.

When all is said and done physicians have two great aims, one to prevent disease, and the second to cure it, or at least to give comfort to the patient. To give patients the best treatment it is necessary to have an accurate conception of the nature of the disease that afflicts them, a knowledge of both the actual causative factor, and of the pathology of the lesions. It would also be much better for all concerned if we had more knowledge as to the resistance and idiosyncrasies of the patient. Still further it is essential to know the pharmacological actions of the remedies employed.

As already indicated we do not know the cause of a great many skin diseases, and in others we have only approximate knowledge. As a result much of our treatment is purely empirical; we employ remedies because our experience shows that they do good, not because of any true scientific basis.

To satisfactorily practice medicine it is not necessary to employ a great number of drugs. The intelligent use of a few is much to be preferred to the haphazard use of a great many. And it is just for this reason that I do not believe in proprietary remedies. The physician who employs them does not know the strength, and too often not even the nature, of the medicines that he is using, and hence it is impossible to make a satisfactory change, should one be necessary.

It is always wise to treat the patient and not the disease: too often the consultant is of no real help for this reason, because in one or two visits he is unable to satisfactorily diagnose the peculiarities of the patient. Patients are certainly not all alike: they do not all react in the same way to either disease or to medication.

In some instances local treatment alone will suffice to cure diseases of the skin, but in many other cases it is essential to employ internal treatment as well: this of course is true in all diseases in which the cutaneous lesions are simply the manifestations of a general disorder.

There is no danger in "curing an eruption too soon" or in "driving it in." Upon this point all dermatologists are in accord. Physicians who say the opposite are simply trying to excuse themselves for their inability to cure a disease, often perfectly justifiable as such failure is.

There are two varieties of treatment, *general* and *local*.

General Treatment.

In the general treatment of disease it is often necessary to correct faulty hygiene. It goes without saying that everyone should have fresh air both day and night, that there should be some exercise, preferably in the open air, and that there should be a suitable amount of rest. As already pointed out occupation may be responsible for many troubles, so at times certain regulations have to be carried out in this respect. The general tone of the skin depends upon the general health of the body. There is no better general, hence cutaneous, tonic than the shock of a cold bath to those who are able to react to it.

Food.— *The question of food* is an all-important one, and one that is the subject of many disputes. In deciding what a patient with skin trouble should or should not eat, we are frequently up against a very difficult proposition, for what will agree with one will disagree with another. In the first place we must always be sure that the patient drinks a sufficient quantity of water, and eats the kind of food best calculated to keep the bowels open. Secondly, any article of food for which he has an intolerance or which makes the disease worse must be eliminated. It is on this point that every patient is his own best physician. Thirdly, eating between meals should be prohibited. Probably the evils that so often result from the ingestion of candy, or from various concoctions served at the soda fountains, are due to overloading the stomach at the times when it should be resting, rather than to the direct evils of the food. Fourthly, excessive eating of carbohydrates is often distinctly bad for many of the acute inflammatory dermatoses, especially acne. It is not at all unusual to get a case of acne nearly well, and then have the patient go on a "candy spree," a marked relapse following. Likewise certain other articles of food are usually prohibited for patients suffering from these acute diseases: this list includes not only candy and pastry, but also pork, pickles, alcohol and cabbage. In regard to alcohol a word must be said. Alcohol is a totally unnecessary thing, except perhaps to the aged and the drunkard. Not only is alcohol unnecessary, but it is also positively injurious in many cases of cutaneous trouble, for it has a marked vasodilator action, thus upsetting the tone of the skin. Condiments may have an action similar to alcohol, hence it is often necessary to prohibit them. Fifthly, it is doubtful if there is a specific diet for any skin disease: the extravagant claims made by some authors have not been verified by others of equal experience and repute. Sixthly, in the study of anaphylaxis it has become apparent that there are certain individuals who are sensitized to certain articles

of food. In some children the ingestion of eggs causes marked symptoms, often with some cutaneous manifestations. It has been definitely proven that certain cases of urticaria are due to a sensitization to pork or to some animal proteid. It is highly probable that this field is just being opened up, and that cutaneous tests with suspected substances will yield to some important discoveries in the future. Those especially interested in this subject are referred to the papers of Stelwagon,¹ Fox,² and Montgomery and Culver.³

Medicines.—In addition to general measures, *medicines* of various kinds are frequently employed, and these may be divided into three classes: first, those that have a specific action upon the trouble of the skin; second, those that have a specific action upon some internal trouble; and third, the group of tonics and alteratives. The first group is very small indeed, even if it be not separated from the second group. Included are salvarsan and neosalvarsan in yaws and syphilis, mercury and possibly the iodides in syphilis, possibly quinine in certain exfoliating dermatoses, and the large group of vaccines, bacterins, antitoxins, etc. The administration of salvarsan will be considered under the heading of syphilis, but the general subject of *bacterial bacterins* must now be considered.

Wright's⁴ publications on the subject first attracted general attention in 1903, and by 1906 many men were working on the subject. At the present time we are still ignorant concerning many of the fundamentals of bacterin therapy, although many things are definitely known. The underlying principle of bacterin therapy is founded on the principle of natural immunity, that an infected person will form in his body antibodies to counteract the toxins of the infection. It is further assumed that in certain infections not a sufficient quantity of the toxin reaches the bodily cells to stimulate them to the formation of antitoxins, and that if these toxins be artificially administered so as to reach the general body cells, these cells will be stimulated to the formation of antitoxin. Wright showed that phagocytosis is probably the most active of the bodily defenses against disease due to bacteria. In the blood stream of certain individuals there is a substance that seems to sensitize the bacteria so that they can be more easily engulfed by the leucocytes: these substances were spoken of as opsonins. It was found that these opsonins could be markedly increased by injecting dead cultures of specific

¹ Stelwagon: Jour. Cutan. Dis., 1907, xxv, 147.

² Fox: Jour. Cutan. Dis., 1907, xxv, 152.

³ Montgomery and Culver: Jour. Cutan. Dis., 1912, xxx, 319.

⁴ Wright and Douglas: Proc. Royal Soc. of London, 1903, lxxii, 357; 1904, lxxiii, 128.

Wright: Jour. Amer. Med. Assn., 1907, xlix, 479.

micro-organisms. By comparing the phagocytic power of an infected individual's serum with that of normal serum for the same bacteria, Wright established what he was pleased to call the "opsonic index." As this estimation has been found to be impracticable for general use it has been given up.

We are not yet certain whether autogenous bacterins should always be used, or whether stock preparations are sometimes allowable. We do not know whether the bacteria used in the making of the bacterins should be killed by heat or by some chemical preservative, or whether, as suggested by Hirschfelder,⁵ they should be digested by ferments so as to make sure that all of the endotoxins are extracted. Nor do we know the relative value of filtrates and precipitates derived from the cultures. Concerning many of them we do know either the correct dose or the proper interval that should elapse between injections. On the other hand we do know many things, as has been well pointed out in a series of special articles in the *Journal of the American Medical Association*.⁶ Care must be taken that the infecting organism be known, that the bacterin used be sterile, and that the interval elapsing between injections be sufficiently long so that a "negative phase" is avoided. By "negative phase" is meant the overwhelming of the patient with toxin, determined clinically by the aggravation of the symptoms. At the same time sufficient bacterin must be given to stimulate the cells to the formation of antitoxin. According to the observations of most workers, it is usually best to use an autogenous bacterin. The injections are usually given at about weekly intervals, never closer than four days apart, and the dose is usually increased about one-third each time. The injections may be given with an all-glass syringe, accurately graduated as to dosage, using a fine needle and making the injections in the subcutaneous tissue of the arm. At first there is usually a little burning due to the presence of carbolic acid or cresol in the preparation, but there should be no active inflammation present. If given in proper doses there should be no general reaction to the injection. The use of bacterins containing more than two organisms is usually to be condemned inasmuch as the surplus is unnecessary. There is no object in using shotgun preparations: their use is intended simply for those who cannot or will not make a bacteriological diagnosis. Other forms of treatment are never to be neglected, bacterins are not a panacea for all ills. But this much is certain, bacterins when properly used are often of great aid in some of the chronic infectious diseases of the skin. Additional in-

⁵ Hirschfelder: Jour. Amer. Med. Assn., 1912, lix, 1373.

⁶ Special Articles: Jour. Amer. Med. Assn., 1913, lx, 1298, 1360, 1459, 1539, 1621, 1704, 1791, 1880, 1995, 2046.

formation may be obtained in the articles of Gilchrist⁷, Varney⁸, Engman,⁹ Whitfield¹⁰ and myself.¹¹

"*Autoserum therapy*" in the hands of several men, of whom Gotthell¹² is the most prominent American, has proven almost specific for certain diseases, notably psoriasis. Blood is drawn from a vein, centrifuged to separate the formed elements, and the serum is then reinjected, all under aseptic conditions. It is rather difficult to see the scientific foundation for this form of therapy, nor has the method always proved of great value.

As we know, many diseases of the skin are either aggravated or prolonged by various inner ailments, of which constipation and indigestion are probably the most prominent ones. Indigestion is of many varieties, and no one treatment will suffice for all of these: it is first necessary to make a diagnosis. The same is true of constipation. It is always best for the patient to correct these ailments with the aid of as little medicine as possible, but too frequently we have to use a *laxative*, *caseara* still holding an honored position.

Insufficiency of, or oversecretion from, the ductless glands may cause many troubles, some of which have cutaneous manifestations, as the pigmentation of Addison's diseases. The treatment of this class of disorders either by specific animal extracts, or by surgery, is one of the most brilliant fields of modern medicine.

The so-called *intestinal antiseptics*, bismuth subgallate, creosote, carbolic acid, salicylic acid and the salicylates, salol and a host of others have been widely used in dermatology, but their value is problematical from both a clinical and scientific standpoint, for careful laboratory work has shown that they have very little effect upon the contents of the intestine. Within the past few years cultures of the lactic acid bacillus, the so-called "Bulgarian bacillus" have been much used where intestinal putrefaction was suspected, but in general the results have been very disappointing.

As *tonics*, *alteratives*, etc., a whole host of drugs is employed. It must always be remembered that no tonic is equal to, or even approaches, fresh air, exercise, proper food and general good hygiene. However, among this group certain drugs must be considered.

Arsenic was formerly the favorite remedy of all dermatologists, and was employed in practically every dermatosis. Even today it is

⁷ Gilchrist: Jour. Cutan. Dis., 1910, xxviii, 568; Jour. Cutan. Dis., 1913, xxxi, 977.

⁸ Varney: Jour. Amer. Med. Assn., 1907, xlix, 316.

⁹ Engman: Jour. Cutan. Dis., 1910, xxviii, 553.

¹⁰ Whitfield: Brit. Jour. Dermat., 1913, xxv, 307.

¹¹ Hazen: South. Med. Jour., 1914, vii, 240.

¹² Gotthell and Satenstein: Jour. Amer. Med. Assn., 1914, lxiii, 1190.

undoubtedly used too freely, for it has certain dangers and very few benefits. The first danger is that of acute poisoning, which is not a grave risk. The second danger is that of chronic poisoning, which is rather more frequent. Fortunately poisoning is usually heralded in by either gastro-intestinal disturbances or swelling of the lower eyelids in plenty of time to stop the administration of the drug without grave danger to the patient. It is possible that arsenic may produce a herpes zoster. It is certain that a rather severe pigmentation may be produced by it, and keratoses may result from its prolonged administration. These keratoses may become cancerous. Arsenic is believed to have a specific nutritive effect upon the epithelial cells: it should, then, be of benefit in the chronic, scaly dermatoses, but not in the more acute ones. Arsenic should always be begun in small doses, and discontinued in case of gastro-intestinal disturbances or of puffiness under the eyes, or if pigmentation develops. It should never be given over any prolonged space of time. Arsenic may be employed in the well-known forms of Fowler's solution, Donovan's solution, arsenious acid, cacodylate of sodium, arsenate of iron, etc. Atoxyl, arsetacin, etc. are no longer employed because of the harmful effects that they may have upon the optic nerves.

The *bitter tonics* are often useful in whipping up a lagging appetite. While almost any of them may be employed, a very useful formula is:

R	Tct. nuc. vom.	3 iss	6.
	Sod. bicarb.	3 ii	8.
	Tct. gent. co.	3 iss	45.
	Aquæ, q.s. ad	3 vi	180.

M.

Sig.: 2 teaspoonfuls in water three times a day before meals.

The Fl. ext. of cascara may be added if a laxative effect is desired.

Calcium lactate, which is better than the chloride, is employed in many diseases in which it is claimed that there is an increased coagulation time of the blood. It may also be employed if there is a suspected deficiency of calcium salts. Both Whitfield¹³ and White¹⁴ claim very good results for it in erythema multiforme, purpura and urticaria. The author's results with it have been excellent in some recent cases.

Calcium sulphide is often employed in from $\frac{1}{4}$ to 1 gr. doses for suppurative processes of the skin, but to me seems practically without value, not nearly so efficacious as the bacterins.

Cannabis indica is sometimes very useful in stopping general itch-

¹³ Whitfield: *Skin Diseases and their Treatment*, London, 1907.

¹⁴ White: *Jour. Cutan. Dis.*, 1914, xxxii, 691.

ing, but given in overdoses it is very apt to result in double personality.

At times the *iodides* are of great value, especially in syphilitic conditions. Potassium iodide is usually employed, but sodium iodide is nearly as effectual and not nearly so irritating. At times the syrup of ferric iodide may have to be substituted, but is not so good. The average dose is from 10 to 30 grains in plenty of water or milk, or, even better, in carbonated waters, as suggested by Kinyoun.

Iron is often a very useful tonic in cases of anæmia, especially in those who do not use iron containing foods. It is probable that no preparation is superior to the old-time Bland's pills.

Quinine is very useful in certain exfoliating dermatoses, and possibly in pemphigus. Mook's¹⁵ results in dermatitis exfoliativa have been excellent. The doses must be large, and the best preparation is the hydrochloride, for this salt is comparatively soluble. In pregnancy it should not be used in large doses, as it might cause abortion.

Strychnine, and its alkaloid nux vomica, is very useful as a bitter tonic. In the doses usually employed the blood pressure is not affected in the slightest.

Local Treatment.

Local treatment is nearly always employed in skin diseases. The following groups of drugs need to be considered: (1) baths; (2) detergents; (3) soothing and protective applications; (4) antipruritics; (5) anæsthetics; (6) stimulants; (7) antiseptics; (8) caustics; (9) keratolytics; (10) keratoplastics; (11) parasitocides.

Baths are employed for several purposes, usually to cleanse the skin, but also to stimulate it, usually through the effect upon the circulation, also for soothing effects as in pemphigus, and at times for antiseptic purposes. Water alone acts upon the skin by dissolving the grease and dirt, being much more effective when soap is used. Water is very irritating in certain of the acute dermatoses, notably eczema. A cold shower or plunge, either alone or following a hot bath, is one of the best stimulants for the skin. Continuous baths at body temperature are often employed in treating lesions where there is an extensive loss of epidermis, as in burns. Occasionally in this group of cases it is necessary to make use of water for cleansing purposes, in spite of the irritation that it causes. The following baths are then used:

Bran, 2 to 5 pounds to 30 gallons of water.

Starch (amylum) in the same proportion.

Linseed in the same proportion.

¹⁵ Mook: Jour. Cutan. Dis., 1910, xxviii, 458.

These ingredients should be put in gauze, or other, bags, and thoroughly kneaded in the water until it becomes milky. Alkaline baths, as sodium bicarbonate, are sometimes used, but it should be remembered that alkalis act as dissolvants of the keratin.

Sulphur baths are used in psoriasis and scabies. Vlemineckx's solution is one of the best of this type, the formula for which is:

R	Calcis hydrat.	℥ ii	60.
	Sulph. sublim.	℥ iiii	90.
	Aquæ, q.s.	℥ xii	360.

Ft. According to National Formulary.

Sig.: Add ℥i to 30 gallons of water.

A mercurial bath may be used in ulcerative syphilis, also in pediculosis. A good formula is:

R	Hydrar. chlor. cor.	3 i	4.
	Sod. chlor.	3 i	4.

M.

Sig.: Add to 20 gallons of water.

Detergents are used to remove grease and scabs from the skin. While water is usually employed, either with or without soap, still in eczema, where water is irritating, oils or cream may be employed. Olive oil, castor oil, cottonseed oil or sweet oil may be used, and if these are irritating cream or top milk may be substituted.

Emollients are soothing and protective applications. In practically all of the acute inflammatory dermatoses, especially those not directly of pyogenic origin, it is necessary to employ some of these preparations. Powders and lotions are usually much better than ointments. Any of the 'dry dusting powders, either singly or in various combinations may be used. Among the popular ones are talc, boric acid, calomel, bismuth starch and lycopodium. An excellent emollient is the calamine lotion:

R	Pulv. calamin	3 ss	2.
	Zinci carb., C.P.	3 ii	8.
	Zinci oxidi	3 ii	8.
	Glycerini	5 ss	2.
	Phenol.	5 ss	2.
	Aquæ calcis, q.s. ad	℥ vi	180.

M.

This may be employed frequently. If the glycerine is irritating, as it is to some skins, it may be omitted. Used in the above proportions the lotion is about the same color as skin, and is not so noticeable as when more of the calamine is employed.

Pusey¹⁶ regards the following lotion highly:

R	Tct. opii	℥ ii	60.
	Sol. plumbi subacet.	℥ ii	60.
	Zinci oxidi	℥ ii	60.
	Aquæ, q.s. ad	O i	500.
M.			

Schamberg¹⁷ speaks well of a concentrated solution of boric acid. No matter what lotion is used the sediment should be allowed to collect upon the skin, over which it forms a protective covering, and should be removed only when crusts form.

Antipruritics are indicated where it is necessary to stop itching. The commonest are: carbolic acid in 2 to 4 per cent strengths, menthol in the same strengths, tar, oil of cade, salicylic acid. Baths of baking soda will often act very well, also alcohol. Of course the ideal way to stop itching is to remove the cause, but this cannot always be done promptly, hence it is necessary to employ local treatment as well. Antipruritics are of two classes, those that are directly analgesic to the skin, as phenol, and those that cause another sensation to be substituted for the itching, as menthol, which substitutes the sensation of cold. At times internal remedies must be employed, the bromides, aspirin, phenacetin, and the various hypnotics are all more or less useful, but it must always be remembered that certain of them are irritating to the skin.

Anæsthetics are used to stop pain. In the case of minor operations cocaine or one of its derivatives is usually employed. In ordinary cases Schleich's solution is as good as any. This is a solution of 1/10 of one per cent of cocaine dissolved in normal saline solution. It must be superficially injected with a hypodermic so as to form a wheal. When this is properly done anæsthesia is complete. It is absolutely unnecessary to use strong solutions of cocaine, in addition it is often dangerous. Carbolic acid is also distinctly analgesic, even to the unbroken skin, but in strong solutions acts as a caustic. A solid bit of crystal can be held against a furuncle, and will soon drill an opening into it, absolutely without pain. For painful ulcers nothing is superior to orthoform, usually in the strength of about 10 per cent.

Stimulants are used to cause an increased blood supply to a part, thus causing an absorption of pathological elements, and are chiefly used in chronic inflammatory conditions, especially where there is considerable thickening. Those most commonly applied are tar, oil

¹⁶ Pusey: Principles and Practice of Dermatology.

¹⁷ Schamberg: Diseases of the Skin.

of cade, sulphur, the mercurial salts, balsam of peru, chrysarobin, iodine, silver nitrate, etc.

Antiseptics are applied to the skin with the idea of destroying micro-organisms thereon. Cutaneous infections vary in depth, sometimes they are upon the surface of the skin, but too often in the depths of the hair follicles, or in the corium. In the latter cases it is impossible for an antiseptic to reach them in a satisfactory manner. The following drugs are frequently used: Ammoniated mercury, yellow oxide of mercury, oleate of mercury, bichloride of mercury, sulphur, salicylic acid, boric acid, carbolic acid, tar, oil of cade, iodine and many others. Antiseptics may be applied in the form of ointments, lotions, wet dressings, or in the case of iodine may simply be painted upon the surface. In dermatological practice ointments are usually used.

Caustics cause local destruction of tissue. They are sometimes used to destroy new growths of various kinds, to hold exuberant granulation tissue in check, sometimes to encourage the growth of granulation tissue. Those usually employed are silver nitrate, the mineral acids, trichloroacetic acid, glacial acetic acid, lactic acid, arsenious acid, pyrogallol, caustic potash, etc. Carbon dioxide snow is another form of caustic.

Keratolytics cause solution and destruction of the horny layer. The soaps, especially those containing free alkalis, salicylic acid, resorcinol, and all alkalis work in this way.

Keratoplastics cause the soft epidermal cells to become keratinized. Unna considers that they act by chemical reduction. Tar, resorcinol in weak strengths, pyrogallie acid, chrysarobin, mercury and sulphur may be included in the list. All are more or less astringent, act somewhat as irritants, and hence may act by arousing the defensive powers of the body.

Parasitocides are used to kill various animal invaders and parasites. Sulphur, various mercurial salts, balsam of peru and naphthol are among the best.

The drugs used in dermatology, with the exception of a few powders, are rarely used in their pure forms. They are usually made up in the form of ointments, lotions, pastes, etc.

Lotions are liquid mixtures, usually made with water or alcohol as the menstrum. Plain water is frequently used, but lime water or rose water may be substituted. In place of alcohol a small or large proportion of bay rum may be employed. Lotions seem to be rather more efficacious than are powders, and not so irritating as are ointments, hence are frequently employed in the acute inflammatory dermatoses. They are more pleasant to use than are greasy applica-

tions. Glycerine is often added to them in order to avoid the dryness of the skin that so often follows their use. If a lotion is desired to exert a protective action for any length of time, a little glycerine and a little tragacanth are added, about 2 to 3 grains to the ounce. When it is desired to increase the drying effect alcohol may be substituted for some of the water: this is especially desirable in cases of itching.

The following lotions are commonly employed:

Normal salt solution as a non-irritating wash.

Boric acid in concentrated solution.

Calamine lotion, already described.

Solution of aluminum acetate (Liquor Burrowii), used chiefly in the form of wet dressings for acute inflammatory disorders:

R	Alum. acet.	3 i	4.
	Acidi borici	3 iss	6.
	Resorcin.	3 i	4.
	Aquæ, q.s.	3 xii	360.

Lead and opium wash, already described.

Other excellent ones are:

R	Phenol.	℥ v	.3
	Glycerini	3 i	30.
	Aquæ, q.s.	3 i	30.
R	Co. tct. ptcis liq.	℥ x	.6
	Aquæ, q.s.	3 i	30.
R	Mentholis	3 i	4.
	Camph. chlor.	3 i	4.
	Phenolis	3 i	4.
	Aquæ, q.s.	3 xii	360.
R	Alum.	gr. x	.6
	Aquæ	3 i	30.
R	Lotio. nigræ	3 ss	15.
	Aquæ calcis	3 ss	15.
R	Pot. sulphuret.	5 ss	2.
	Zinci sulphat.	5 ss	2.
	Aquæ, q.s.	3 iv	120.

This is the well-known white wash or *lotio alba*, an excellent sulphur astringent preparation. It is made by dissolving each of the constituents separately, and then mixing the two. Care must be taken that the potassium sulphide is fresh.

R	Sulph. precip.	3 i	4.
	Tragacanth.	gr. xx	1.250
	Spts. camph.	3 i	4.
	Aquæ	5 iv	120.

This is the Kummerfeld's Solution, so useful as a sulphur wash.

Wet dressings are used when it is desired to keep the skin constantly in contact with medication. They are applied in one of two ways, either gauze or cotton is saturated with the medicine and a water-proof covering placed over it, or the mixture is poured over gauze every few minutes. As a water-proof covering oiled silk is usually employed. When a soothing effect is desired it is important to allow evaporation to take place, hence a water-proof covering must not be added. But if it is desired to obtain heat and moisture such a covering should be used. Wet dressings are employed for two chief purposes, first to dissolve off crusts and scales, and second to apply antiseptics.

Oils are sometimes used. The "petrox" preparations of iodine, tar, oil of cade, salicylic acid, etc., are excellent when we desire a stimulating effect without too much irritation. The medicinal substances are held in suspension in a soapy preparation made from ammonia and mineral oil. It is worth noting that they should be freshly prepared, as some of them do not keep well. In some instances the drugs employed may be directly dissolved in olive oil, cottonseed oil, etc.

Ointments are made up with fat as a base. Those commonly employed are cold cream, lanoline, vaseline, lard, white and yellow wax, diachylon ointment and cocoa butter. The latter two are added to give stiffness, while glycerine, liquid vaseline or some oil may be added to soften. I am coming more and more to the almost exclusive use of cold cream as a base, for it is a much more elegant preparation than any of the others. The only disadvantage is that it will occasionally become rancid. Lanoline has the advantage of being miscible with water. Diachylon ointment was originally suggested by Hebra. It is an oleate of lead ointment, may become rancid and is rather difficult to prepare. According to Hyde the best way to make it is as follows: fourteen ounces of olive oil and sixteen ounces of water are mixed and brought to the boiling point over a water bath. Thirty

drams of finely powdered litharge are slowly sifted into the liquid, which is boiled, with constant stirring, until all the particles of litharge have been dissolved and a homogeneous mass is formed. Water is added as necessary during the boiling to preserve the proper consistency, and stirring is continued until the ointment is cold. While cooling one drop of oil of rose or oil of lavender is added to each two ounces of the ointment. Piffard has suggested the simple plan of mixing together equal parts of lead plaster and vaseline. Practically all drugs may be incorporated into such bases.

Pastes are practically ointment bases in which a powder has been incorporated to add stiffness. They tend to absorb secretions, and not to dam them back as do ointments, and hence may be used upon weeping surfaces. They should be rubbed over the skin until smooth, and then a layer of inert powder should be added, or else a layer of gauze. They can be removed by means of oils. Lassar's paste is the type upon which most of the others are constructed:

R	Zinci oxidī	3 ii	8.
	Amyli	3 ii	8.
	Petrolati	3 ii	8.

Various drugs may be incorporated into this preparation, just as in ointments.

Unna's paste is sometimes used:

R	Terræ silicæ	5 i	4.
	Ung. zinci	3 i	32.

Plasters are adhesive preparations for use when it is wished to apply a small amount of remedy, usually a very active one, to a limited surface. They are chiefly used for the application of caustics. As bases are used mixtures of wax, resin and lead plaster. As examples may be mentioned the official soap plaster and also Neumann's plaster, the formula of which is:

R	Olei terebinth.	3 i	4.
	Ceræ flavæ	3 iss	6.
	Emplastrī plumbi	3 vi	24.

Fixed protective applications are applied while in liquid form, and upon drying leave a fixed residue on the skin. They are of two varieties, those that are impervious to water, and those that absorb water. The best example of the first is collodion, or better flexible collodion, which may be used as a base for salicylic acid, chrysarobin, etc. The compound tincture of benzoin is often used as a varnish, being some-

what analagous to collodion. The second group comprises gelatine preparations. Unna's zinc oxide jelly is most frequently employed:

R	Zinci oxidī	℥ ss	15.
	Gelatin.	℥ ss	15.
	Glycerini	℥ i	30.
	Aquæ, q.s.	℥ iss	45.
R	Zinci oxidī	℥ iii	12.
	Gelatin.	℥ i	30.
	Glycerini	℥ i	30.
	Aquæ	℥ i	30.

These dressings may be applied to acutely inflamed surfaces for protection as they are non-irritating. They are easily removed with water.

Powders give a certain amount of protection to the surface, they absorb some moisture, but at the same time give an increased evaporating surface, and are thus cooling and soothing to the surface. In order to produce effect for any length of time powders must be impalpable. Many are used, among the commonest are: zinc oxide, zinc carbonate, bismuth subnitrate, talcum, kaolin, zinc stearate, magnesium carbonate, prepared chalk, starch and lycopodium. Certain powders, mixed with inert and impalpable powders, are used for their medicinal effect; such antiseptics as calomel, boric and salicylic acids, and many others are thus used. Orthoform may be used for the relief of pain.

The following drugs, widely used externally in dermatology, deserve special mention.

Alcohol is an excellent antiseptic. Owing to its rapid evaporation it has a cooling effect, and it dissolves off the external covering of grease, and extracts water from the tissues. It is used for bathing areas to remove grease and dirt, to prevent infection, and to dehydrate the surface of the skin before electrolysis. It is used as the menstrum for applying certain drugs to an unbroken surface. It is sometimes useful in disinfecting the cracks and fissures of eczema.

Adrenaline in a one to one thousand solution is chiefly used to stop capillary bleeding, and is often added to Schleich's solution before operation. After curetting a lesion it is also useful to stop bleeding.

Arsenic, usually used in the form of arsenious acid, is a powerful caustic, and is frequently employed by dermatologists for the destruction of neoplasms. It will be fully discussed under the heading of cutaneous cancer.

Balsam of peru is a valuable stimulant for the skin. It is largely used in dressing leg ulcers. It is also used in scabies, but it may cause either a local dermatitis or irritation of the kidneys, hence should not be used over large surfaces.

Boric acid is a mild antiseptic, yet soothing in effect, but cannot be depended upon to stop even superficial infection. It is chiefly used as a dressing after operations, to ulcers, etc. Cushny¹⁸ has called attention to the fact that severe poisoning, and even death, may follow its too free external use.

Calamine is an impure zinc carbonate, and has a reddish-brown color, the tint varying greatly in different specimens. It may be combined with zinc oxide or zinc carbonate to form a flesh colored powder. It is insoluble in water and non-irritating to the skin. It is chiefly used in form of calamine lotion, already described.

Carbolic acid is very useful. It is a powerful caustic and antiseptic, and is also anæsthetic in weak strengths. It may be employed in two to four per cent strengths to stop itching or for its antiseptic properties. In full strength it is useful in swabbing out abscess cavities. In certain chronic diseases, such as lupus erythematosus it is painted over the surface until white, and then removed with alcohol. A pure crystal may be grasped in a pair of pliers and used to open a small abscess, such a procedure being painless.

Chrysarobin is usually considered to be strongly antiseptic, but the studies of Schamberg¹⁹ have demonstrated that it is a strong reducing agent, and that its antiseptic properties are very weak. Its chief value is in treating the chronic patches of psoriasis. It is often intensely irritating to the normal skin, and may also cause considerable renal irritation, hence must be used with care, starting with only a two per cent strength, if applied in ointment form. More recently Schamberg has introduced neochrysarobin, which has given rather better results in some hands. McMurtry²⁰ has recently written a very complete article upon the action of chysarobin.

Glycerine is often used in solutions to prevent the skin from becoming too dry: it also aids in attaching the powders to the skin. In certain cases it is irritating, and some skins cannot tolerate even a small percentage of it.

Hydrochloric acid is occasionally used as a caustic, but not to any great extent, as there are many better ones.

Iodine is one of our most valuable antiseptics. The tincture is now commonly painted on the skin before operations, and is just as

¹⁸ Cushny: *Pharmacology and Therapeutics*, 5th Ed., 585.

¹⁹ Schamberg, Kolmer and Raiziss: *Jour. Cutan. Dis.*, 1915, xxxiii, 1.

²⁰ McMurtry: *Jour. Cutan. Dis.*, 1913, xxxi, 945, 1022.

effective as the more elaborate schemes formerly used. The tincture, either in full strength or diluted, is valuable in many of the cutaneous infections. At times it is distinctly irritating.

Mercury and the mercurial salts are very extensively used, and justly so. They are valuable both as antiseptics and stimulants. Ammoniated mercury is one of our best antiseptics, and is widely used in all superficial infections. It can be used in full strength, except on young children. A favorite prescription is:

R Hydrar. ammon.	3 i	4.
Ung. ag. ros., p.s.	3 i	30.

Care must always be taken that the prescription is perfectly smooth when filled, as a rough ointment may cause considerable irritation.

The *yellow oxide* is used as an antiseptic in strengths of 10 to 15 grains to the ounce of ointment. While not so powerfully antiseptic as the white precipitate just mentioned, it has the advantage of being much less irritating, and can be safely used in many cases of eczema, frankly due to infection, as around discharging ears, etc. When used upon the eyelids the usual strength is but 5 grains to the ounce.

Mercurial oleate makes an effective ointment, although one not widely used by the majority of dermatologists. The official ointment is practically a 25 per cent preparation and is especially useful in treating children suffering from hereditary syphilis, and also adults where there is much ulceration. It is much cleaner than the usual mercurial ointment.

Unguentum hydrargyrum or *blue ointment* is made in three strengths, the 25, 33 and 50 per cent. It is widely used in the latter strength for giving injections to syphilitic patients, and also for the treatment of pediculosis pubis. It should be pointed out that mercurial injections are not without danger, as a violent dermatitis may follow their administration, especially if they are employed upon a hairy surface.

The acid nitrate of mercury, as pointed out by Sherwell²¹ and myself²² is an extremely valuable caustic, and yet one that can be readily controlled.

Naphthol, or more properly speaking, β -naphthol, is an excellent antiseptic, although now but little used.

Nitric acid is considerably employed as a caustic, especially in removing warts, in which it often works fairly well. However keloids may follow its application.

²¹ Sherwell: Jour. Cutan. Dis., 1910, xxviii, 427.

²² Hazen: Washington Med. Annals, 1912, xi, 246.

Oil of cade is made by the distillation of the wood of a juniper tree. It is comparable to tar, but is more agreeable to use. It is an excellent stimulant, and is widely used in the strength of from one-half to one dram to the ounce. It is especially valuable in cases of chronic eczema and the like.

Orthoform may be used in an ointment in the strength of 10 per cent to cause the cessation of pain when it can come in contact with the nerve endings. It is useless upon unbroken skin.

Potassium hydroxide is probably the best solvent for keratin, but its action is often difficult to control. The sticks are used for the removal of warts and other horny growths, and it was formerly extensively used in the treatment of cutaneous cancer.

Potassium permanganate is an excellent antiseptic, formerly much used to disinfect the hands and skin before operation. It is especially useful in sweating feet, and in greasy acne, being removed with oxalic acid.

Pyrogallic acid has been used as a selective caustic, that is, to remove only the diseased tissue, while leaving the sound tissue unaffected. It is practically painless in comparison to the other slow-acting caustics. Personally, I have been much disappointed with it as it has often seemed almost totally inert.

Resorcinol is one of the most valuable drugs to the dermatologist. In weak doses, it is keratoplastic, but in stronger form is markedly keratolytic. It is also antipruritic and antiseptic. Resorcinol is much used in hair tonics, but it is generally agreed that it should not be used upon those subjects who have either gray or very blonde hair, as it is apt to produce a dirty yellowish color. It is much used in the treatment of acne, and also in the chronic scaly dermatoses. It is stated to be incompatible with both camphor and bichloride of mercury, but can probably be safely used in connection with either drug. McMurtry²³ has recently written an excellent article upon this drug.

Salicylic acid has likewise been carefully studied by McMurtry.²⁴ It is an excellent antiseptic, keratolytic, stimulant and antipruritic. Its action is somewhat similar to that of resorcinol, but is more marked. It is chiefly used in chronic, scaly dermatoses and also in horny growth.

Silver nitrate is usually used to burn down granulations or to check capillary hæmorrhage, but often does just the reverse of what is desired, for it may stimulate excessive granulation tissue forma-

²³ McMurtry: Jour. Cutan. Dis., 1913, xxxi, 255.

²⁴ McMurtry: Jour. Cutan. Dis., 1913, xxxi, 166.

tion, and may erode the wall of a small vein. Its caustic action is superficial for silver albuminate is formed by its action upon proteids, and this effectually prevents any deep effect. For caustic work the solid silver nitrate and not the ordinary lunar caustic should be employed.

Sulphur has been studied by many authors, but the article by McMurtry²⁵ gives a summary of all previous work. Sulphur is best used in its precipitated form, for here it is fine and smooth. It is antiparasitic, antiseptic, stimulant, and yet decreases the secretions of the sebaceous glands. It is used in scabies, ringworm, and in all greasy conditions of the skin, as seborrhœa, acne, etc. It may be made into an ointment or cream, or used in a lotion.

Scarlet red is used to stimulate the production of epithelium. It should only be employed around the edge of a wound, and never upon its center, for it is somewhat toxic, and it should never be used for more than one day at a time, alternating with some bland salve, such as boric acid. At times it undoubtedly acts as an excellent stimulant and may be very useful.

Tar is an excellent antiseptic, antipruritic, and stimulant, but seems to be little more efficacious than the oil of cade. It is dirty and disagreeable to use.

Trichloracetic acid is an excellent caustic. Its action has been especially studied by Montgomery²⁶ and by Heidingsfeld.²⁷

Zinc chloride is somewhat used as a caustic to remove cancerous and similar growths. It is intensely painful and hard to control, and the results are not especially good.

Zinc oxide is used as a protective and mild antiseptic, either in lotions or ointments. Its action seems to be that of a bland substance, for its antiseptic properties are not striking.

Other Forms of Treatment.

X-ray Treatment.—In addition to drugs many other forms of treatment are applied to the skin. As one of the most prominent the *X-ray* deserves special mention. The apparatus required consist of a source of current, a machine that will make this current utilizable, a tube for emitting the rays, and various accessories.

The street current is generally used as a source, but storage batteries may be used when this is not available. Static machines have been discarded. Either an alternating or direct current may be used.

²⁵ McMurtry: Jour. Cutan. Dis., 1913, xxxi, 322, 399.

²⁶ Montgomery: Jour. Cutan. Dis., 1912, xxix, 523.

²⁷ Heidingsfeld: Arch. f. Dermat. u. Syphil., 1911, cx, 245.

Induction coils of the Ruhmkorff type are still generally used, but various types of interrupterless transformers are now coming into great favor. The coils should be sufficiently heavy to give a twelve-inch spark. There are plenty of good machines upon the market, and the American machines compare very favorably with the foreign makes.

For heavy treatment work a heavy tube is desirable, so that it will not have to be changed during the treatment. Water cooled tubes often work very well, but the latest is the Coolidge tube, which can be regulated at any desired "hardness," and which is very durable.

The accessories include an amperemeter to show how much current is running into the machine, and a milliamperemeter to show how much current is passing through the tube. A stand to hold the tube in the

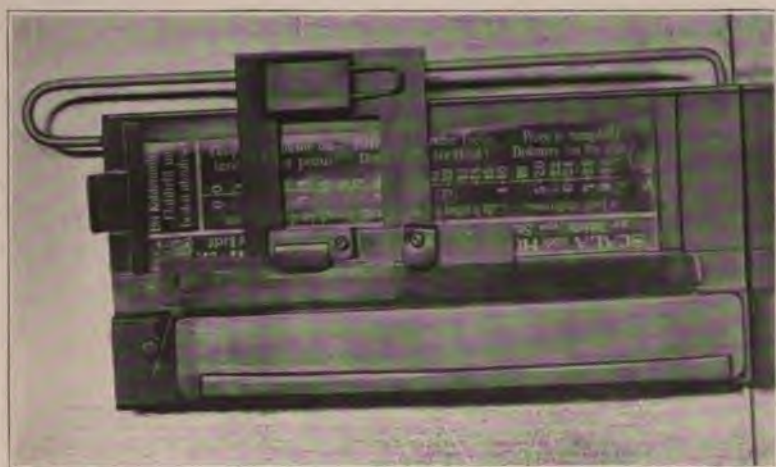


Fig. 5.—Holz knecht radiometer with control pastille in position.

required position is absolutely essential; it should have a sufficiently heavy base to prevent an upset. The operator must work behind a lead screen or in a lead lined booth in order to protect himself from injury. The quantity of the ray can be best measured by means of the Holz knecht radiometer, and the Sabouraud-Noire pastilles, while the quality can be determined by means of the Benoist radiochronometer and the milliamperemeter. Lead foil, to protect parts of the patient, is also necessary.

In using the X-ray there are two different techniques employed. The way still most popular in America, is to give numerous small doses until the desired results are obtained, not measuring the quantity of the rays. In many hands this has given admirable results,

especially in the hands of an expert like Pusey. But on the other side many exposures are necessary, and the disease often becomes resistant to the action of the rays. The present tendency is to give but a few doses, making them much larger than heretofore. In order to do this successfully and to run no risk of burning the patient, it is essential to carefully measure the dose, and this is done by means of the instruments just described. This is best described in the two articles by McKee and Reber,²⁸ in whose hands the results have been excellent. They advise the use of a ray of considerable penetration, about 8 or 9 B., that is, units measured by the Benoist radiochronometer. According to the disease a definite number of Holz knecht units are given. One Holz knecht unit is one-third of the dose required to cause an erythema of the skin of the face. In different diseases different doses are indicated. In carcinoma from five to



Fig. 6.—Benoist penetrometer, small size.

eight H-units are administered at one sitting, but in the majority of other dermatoses the dose is much smaller. In America there has been much discussion of the efficiency of the imported Sabouraud-Noire pastilles, some observers claiming that they do not work well, especially in the dry parts of the country. On the other hand McKee keeps his in a humidior and has found them absolutely reliable. The only other objection that can be raised to the "single dose method" is that all skins do not react in the same way, and that a dose that would not cause an erythema in one patient might seriously burn another. Pusey is certain that there is this element of personal equation, but McKee states that he has never been able to convince himself that it exists. The using of a hard tube gives considerable scope in case it should exist, whereas the limits with a soft tube

²⁸ McKee and Remer: Amer. Jour. Roentgenology, Dec., 1913; New York Med. Jour., March 26, 1913.

are very narrow. The technique is a rather exacting one, and the operator should be sure of himself before he tries a massive dose on a patient.

The X-rays exert certain definite effects upon the tissues:

1. They cause atrophy of the glands and of the hair follicles.
2. They probably have a slightly destructive effect upon micro-organisms.
3. They relieve pain and itching.
4. They are capable of destroying living cells of low resistance, as cancer cells, and the cells of tuberculosis cutis.
5. In slight doses they have a stimulating effect upon cell growth.

Hence they have the following uses in dermatology:

1. To remove hairs, this is not advisable in hypertrichosis, but is advisable in sycosis, ringworm, favus, etc., in which diseases it often constitutes the best form of treatment.
2. When it is desired to cause atrophy of glands, as in acne, rosacea, hyperidrosis, seborrhœa, etc.
3. To destroy pathological tissue, as in cancer, lupus, etc.
4. To give an anodyne effect.
5. To stimulate the skin, as in eczema.

Those interested in the subject of radiotherapy will do well to consult articles by Schultz,²⁹ Belot,³⁰ Stein,³¹ Hampson,³² and Pusey and Caldwell.³³

Radium is very useful in certain cutaneous disorders, but just how useful it is still difficult to determine. Physicists have shown that the rays emanating from it differ in certain respects from the Röntgen rays, but at the present time there seems no good proof that they will accomplish anything that cannot be accomplished by the X-rays. Like the latter, radium is applied in two different ways, first in small doses, and secondly in massive doses. There can be no doubt but that the latter is the more effective, but it does take an enormous supply of material, hence not every physician can afford to give the treatment nor every patient to receive it. Full details may be found in the work of Wickham and Degrais.³⁴ In the treatment of angiomata radium seems to be preferable to X-ray, but probably no better than the Kromayer lamp, and certainly it is much more expensive.

²⁹ Schultz: *The X-ray in Skin Diseases*, New York.

³⁰ Belot: *Radiotherapy in Skin Diseases*, New York.

³¹ Stein: *Med. Record*, May 20, 1911.

³² Hampson: *Arch. Röntgen Ray*, Aug., 1911.

³³ Pusey and Caldwell: *The Röntgen Ray in Therapeutics*.

³⁴ Wickham and Degrais: *Radium Therapy*.

It is not a panacea for all cases of cancer: while it may, and often does, benefit certain cases, still others have been made worse by it. In certain inoperable cases it is a justifiable last resort.

Phototherapy really owes its introduction to Finsen of Denmark. As is well known, the effect of light and of the X-rays is similar. Tissue of a lowered resistance may be destroyed by an excess of ultra-violet rays. Finsen-light therapy consists in the use of an electric arc light, of about 75 amperes and 70 volts, the rays from which are concentrated through lenses of rock crystal, the lenses being kept cool by means of running water. Considerable pressure is made upon the skin so as to remove the blood from the part to be treated. The exposures are made daily and last from one-half to two hours, and are repeated until the skin reacts. This form of treatment is most effective in tuberculosis of the skin.

Because of the excessive cost and size of the original Finsen apparatus a number of modifications have been made, one of the best known of which is the London hospital lamp. This can be run by ordinary house current, and requires but little space. Running water is necessary in order to prevent burns. The action of this lamp is rather superficial. It is especially used in alopecia areata and in lupus erythematosus.

The Kromayer lamp is a mercury-vacuum lamp, made of melted quartz glass, the light escaping through a quartz window. Again running water is essential. This lamp is especially used in vascular naevi and alopecia areata, but the results are divergent.

Many other forms of lamps have been employed, but none are really indispensable, for the results obtained with them can practically always be obtained with other forms of treatment.

High frequency currents are usually obtained through an Oudin resonator, and applied through a vacuum electrode. This method of treatment is much in vogue in all of the "beauty shops," but is of doubtful value. The probabilities are the only effect obtained is that of heat. It is of value in stopping the oozing that follows the opening of acne pustules.

Fulguration consists in the application of a long spark for the destruction of diseased tissue. In dermatology this method is occasionally employed for the destruction of small new growths, but is very painful, and no more effective than other methods.

Electric cautery is simply a modification of the regular cautery. While it has many advantages it is liable to get out of order in the ordinary operating room.

Ionism consists in the driving into the tissues of various substances by means of the galvanic current. Either the zinc salts or iodine

are usually employed. It is more than possible that this method has a distinct future in the treatment of cutaneous infections, infections too deep to be reached by the surface application of drugs. It has been successfully used in the treatment of lupus erythematosus.

Electrolysis is the destruction of tissue by means of the current given off from the negative pole of a galvanic battery. For all ordinary dermatological work a 12- to 20-cell battery, the cells being made of silver chloride, is usually employed. It is not necessary to use a milliamperemeter, for the amount of pain caused the patient is the only true guide as to the amount of current that can be used.

To the negative pole is attached a cord with a needle holder and steel or platinum needle. It is not necessary to have an interrupter upon the holder. To the positive pole is attached a cord with an electrode to be held by the patient. The needle is first inserted and then the patient grasps the electrode so as to complete the circuit. If the needle be attached to the positive pole small bits of metal will be deposited in the tissues. The flow of current is accompanied by some slight bubbling around the needle: the needle is left in position for from thirty seconds to three minutes, according to the effect desired. In removing small growths the needle must be run through the base at different angles. At first there is some swelling and redness; at the end of two or three days a dry eschar forms, which drops off by the end of a week. Very little scarring is left by this method, and it is very efficacious in the case of moles, etc. The greatest use for the electric needle is in the removal of superfluous hairs.

Bier's hyperæmia is usually applied by means of small glass cups attached to rubber bulbs so as to create a partial vacuum in them. The chief value in this method is to remove pus from furuncles, etc. They do not remove wrinkles. They might be of value in some of the chronic dermatoses.

Liquid air was first employed about 1899. For a time it found some vogue in the treatment of various forms of cutaneous neoplasms, but has been entirely discarded because of the difficulty in obtaining and keeping it.

Ethyl chloride has likewise been used for its refrigerating effect, but does not produce a sufficient degree of cold to give a deep action.

Carbon dioxide snow in the solid form was first used by Pusey in 1905. The gas comes in large iron cylinders and is carried by practically all druggists for charging their soda water. One tube is sufficient for many treatments. The technique of gathering is simple: The butt of the tube is elevated a few inches, a piece of chamois is placed over the vent and secured by bandages, and a small amount of the gas allowed to escape into the chamois. It can then be molded or

pressed into the required form. Many special forms of apparatus are upon the market for collecting the snow, but the author has devised a very simple and inexpensive way. The apparatus is shown in Fig. 7. A brass tube is slipped through a collar that screws to the outlet of the gas tube. In this collar is a small vent through which the superfluous gas can escape. The collar is screwed upon the tube, not too tightly, the end of the tube is covered with chamois that is kept in place by a bandage, and the gas is allowed to flow slowly out. In a short time the tube will be filled with solid snow, already moulded for use. Different sized tubes can be used. The snow can readily be handled by means of a pair of heavy automobile gloves with fleece or fur lining. The effect upon the tissues depends upon two factors, first the time that the snow is in contact with them, and second

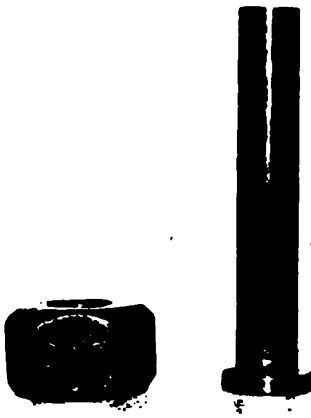


Fig. 7.—Author's apparatus for collecting carbon dioxide snow.

upon the degree of pressure with which it is applied. The skin almost immediately becomes white and hard, and upon removing the snow redness results as soon as thawing takes place. Mere erythema may result from short exposures with little pressure, but a little severer treatment will speedily give a blister. There is some neighboring œdema, which requires no treatment. Many writers have stated that this method of treatment is painless, but this seems to be true only in exceptional cases. This method is of value in treating various types of naevi, lupus erythematosus, and certain benign neoplasms. Low's³⁵ book gives an excellent bibliography, and Pusey's³⁶ articles are also excellent.

³⁵ Low: *Carbonic-acid Snow*, New York, 1911.

³⁶ Pusey: *Jour. Amer. Med. Assn.*, 1907, xlviii, 1354; *Jour. Cutan. Dis.*, 1910, xxviii, 352.

CHAPTER VII.

HYGIENE.

As already pointed out the possession of a good skin is largely dependent upon good general health. The skin is supplied by blood vessels bringing the same food as to the rest of the body. The skin is not nourished nor helped by the so-called "skin foods." Good food, exercise in the open air, rest and healthy living bring a color to the cheeks that the best rouge cannot equal.

However, the skin needs a certain amount of local care. It must be remembered that the skin is normally protected by a thin layer of grease secreted by the sebaceous glands, and that one of the most important duties of this layer of fat is to prevent the extraction of water from the underlying tissues, water not passing through a greased layer. If this protection be removed or absent the atmosphere, especially if windy, will speedily extract water and leave the skin harsh and rough, "chapped" according to common terminology. Hence it is important not to remove too much of this grease, and this is done by being somewhat sparing of hot water and soap before venturing out of doors. In the case of abnormally dry skins it is necessary to use either cold cream or cocoa butter to a limited extent.

"Hand Lotions."—During cold or windy weather or when, if forced to frequently wash the hands, it is essential to use some toilet lotion for the purpose of keeping the skin soft. One of the best lotions is the following:

R	Liq. petrolat.	3 ii	8.
	Syn. ol. rub. ros.	℥ iii	.2
	Pulv. acaciæ	gr. xl	6.
	Mucil. cydonii	℥ ii	60.
	Aquæ destil., q.s.	℥ vi	180.

If this preparation is deemed too greasy, the liquid vaseline can be omitted. In case of deep crusting it is well to add from five to ten grains of salicylic acid. Another formula that is quite generally used is one given by Pusey:

R	Tragacanth.	gr. lxxx	5.3
	Glycerini	℥ ss	15.
	Acid. borici	℥ ss	15.
	Olei bergamot.	℥ v	.3
	Olei rosæ	℥ i	.060
	Olei lavender.	℥ ii	.120
	Aquæ, q.s.	O i	500.

It should always be remembered that glycerine is distinctly irritating to some skins.

Baths.—For those able to react, a cold bath or shower is one of the best cutaneous, and general, tonics ever devised. In addition it keeps the person clean and does not lead to chapping. However, many persons do not react, and in them a cold bath is distinctly bad, for depression rather than exhilaration follows. Soft water is best, that is, water free from magnesium or calcium carbonate. The objection to hard water is that it combines with soap to form a white precipitate, a calcium soap. The easiest way to render water soft is to boil it, for by this procedure free carbonic acid gas is driven off.

The addition of salt to baths is of no value. Borax and baking soda are alkalis, and will dissolve out some of the keratin, hence are not to be recommended. Mud baths are of no value to the skin, in fact they may be injurious.

It is absolutely necessary to wash the face in order to remove grease and the dirt that is sure to stick to it. Oils and fats will remove some of the foreign matter but not all and cannot replace water.

Soaps.—Much utter nonsense has been written about soaps. The best soap is a good soap made by a reputable manufacturer at a fair price. The cheap soaps are bad because of an excess of free alkali, and the expensive soaps are usually made from the same stock as the medium-priced soaps, but wrapped and scented a trifle differently. Castile soap is still in great vogue among the laity, but is made in many different places by many different manufacturers and differs much in value. Good tar soap is excellent for washing the hair. The so-called green soap is a potash soap and makes an excellent shampoo. Medicated soaps are of no value except for the soap itself. In his look upon the care of the skin Pusey has an excellent chapter devoted to the soaps.

Powders.—A small amount of a bland powder is not harmful to the complexion, except when added upon some grease: then it is apt to stick in the pores and sebaceous openings and tend to clog them. Almost any good powder may be used. Powdering of the body is distinctly beneficial, especially in hot weather, when it will often prevent irritation and aid evaporation. Care must be taken to use an insoluble powder.

Creams.—Cold cream is used by almost all women. In dry skins it is distinctly helpful, for it protects against chapping. In those subject to seborrhea and acne it may do great harm, as it will furnish a better medium for the growth of bacteria that help to cause these affections. Perfectly good cold cream may be obtained from almost any good pharmacist: the various creams that sell from twenty-five

cents to a dollar for a small box are no better. Cold cream is made from spermaceti, white wax, oil of almonds, a small quantity of borax and is scented with rose water.

Rouge.—Rouge, when used in moderation, is not harmful, except to the sense of the artistic. As a general rule the tint of the complexion, hair and eyes form a harmonious unit, and when the color of the skin is markedly altered the effect is very similar to that of a pair of dirty cuffs upon an otherwise well-groomed man.

Dry skin can be helped by the occasional use of cold cream. Some persons have a naturally insufficient supply of sebaceous material, and this condition cannot be cured.

A greasy skin is best treated with soap and water.

Excessive perspiration will be considered under the subject of hyperidrosis.

Wrinkles are the natural sequence of movement, and also of the disappearance of the subcutaneous fat. The injection of paraffin to hide them is often wrought with very serious consequences, for the paraffin may lump badly. Systematic massage will temporarily benefit to some extent. Cupping is reputed to be of some value, but only slight.

Care of the Hair.

In the following remarks upon the care of the hair I have frankly borrowed from Jackson and McMurtry's book, "Diseases of the Hair."

Shampoo.—The head of the newly born child is covered with fatty matter, the so-called vernix caseosa. The scalp should be saturated with sweet almond oil, or with olive oil or vaseline. Then after the infant has been washed and bathed the head should be washed with warm water and soap. If the material be resistant to removal the scalp should again be oiled and washing deferred until the next day. The fine tooth comb should never be employed. For some weeks the infant's scalp should be lightly oiled, the hair being washed daily to prevent rancidity.

In both children and adults the scalp should be kept clean: this is best accomplished by shampooing and carefully drying the hair. As a general rule men should wash their heads every two weeks and women every three weeks, but if exposed to much dirt and dust this washing must be more frequently practiced. Under no condition must the washing be so frequent as to make the hair dry, for this leads to its falling. The hair should be rubbed dry with a towel: the hot air from an electric drier is not good for the scalp or hair.

Then a small amount of vaseline or sweet almond oil should be rubbed on the scalp.

Combing.—A good comb has long, wide, thick teeth that are perfectly smooth and not sharp. The fine-toothed comb is of value only in removing nits from the hair, and in disentangling it. A comb should be cleansed every few days by wiping with alcohol or some disinfectant.

Brushing.—An infant's brush should have long soft bristles; adults should have stiffer bristles in their brushes. The bristles should be placed in little clumps, set well apart, and deeply in the brush. The central bristles in each clump should be the longer. This stiff brush should be used vigorously every morning. The brush should be washed and disinfected at least once a week. Alcohol is the best material for this.

Hair Cutting.—The hair should never be "shingled," that is, cut by a to-and-fro motion of the scissors, as this tears the hair. It is extremely doubtful if long hair is any more of a drain upon the body than hair that is kept closely cropped, for the latter probably tends to grow faster than the longer hair, and hence makes more demands upon the vitality. The close cutting of hair after a serious illness is of doubtful value, except that it facilitates the cleansing of the scalp.

Shaving is much better done by the individual than by the barber, for many cutaneous troubles come from the barber shop. The razor should be kept sharp, and one should be careful not to shave "too close," for by so doing some epidermis is removed from the tops of the hair follicles and infection is prone to follow. Shaving makes the hair coarser.

Singeing is an absurdity. The theory for singeing is that the hairs are hollow tubes from which some vital substance might escape if the ends were left open.

Barber shops and hair dressing establishments are fertile sources of spreading diseases of the scalp and hair. Dandruff, alopecia, ringworm, impetigo, sycosis, syphilis and pediculosis are often spread in these places. The operator should be clean and free from disease. He should wash before attending each customer. Towels should be *washed* after each usage. Separate soap and shaving brushes should be used for each customer, or much better and cheaper, cotton substituted for the brush. Razors should be sterilized. Combs and brushes should be cleansed daily. The powder puff should be thrown away and clean cotton substituted.

Hair Dressing.—The curling iron is too much used: it is bad, as it tends to dry the hair, and also as it bends and drags it too much.

The simplest method of wearing the hair is the best. False hair heats the scalp and makes an even better incubator for bacteria: it prevents good ventilation, it drags upon the feeble hair and weakens it, and it is often a source of contagion. Hats should be light and soft so as not to impede the circulation.

CHAPTER VIII.

CONGENITAL AFFECTIONS OF THE SKIN.

In dealing with the group of congenital tumors, the nævi, the various multiple tumors of epithelial origin, xeroderma pigmentosum, and multiple fibromata it seems best to place them together with the same class of diseases which develop during later life. This leaves a comparatively small number of important diseases to be treated under the heading of congenital affections: ichthyosis, epidermolysis bullosa, albinism, and some abnormalities of the hair.

ICHTHYOSIS.

Synonyms.—Xeroderma, Fish-skin disease.

Definition.—A chronic, congenital disease, characterized by abnormal scaliness and dryness of the skin.

Occurrence.—The disease is only infrequently met. According to the figures gathered by Pollitzer¹ it constitutes .16 per cent of all skin disorders, thus being one of the rare diseases. According to both Howard Fox² and myself³ the disease is not so frequent in the negro race as in the white, probably being met about half as often.

Etiology.—The malady is usually spoken of as being congenital, and in certain cases it is said that there is an hereditary tendency. Nearly all dermatologists agree with the words of Hutchinson,⁴ "that it usually takes its origin during intrauterine existence, but that it may be, in many cases, so slight at the time of birth that its presence is entirely overlooked." Occasionally a condition of the skin resembling ichthyosis develops during adult life, usually in connection with some severe and wasting disease. However, this condition is not a true ichthyosis, but rather a simple drying of the skin due to loss of function of the sebaceous and sweat glands.

Symptomatology.—As already indicated the disease begins at birth, or shortly after it. Several degrees of severity are recognized: the mildest being the condition spoken of as xeroderma. In this condition there is a dry, harsh skin that looks and feels rough, especially on the extensor surfaces of the limbs, and to a slightly less degree on the back. There is always considerable bran-like scaling, which is

¹ Pollitzer: *Jour. Cutan. Dis.*, 1914, xxxii, 312.

² Fox: *Jour. Cutan. Dis.*, 1908, xxvi, 65.

³ Hazen: *Jour. Cutan. Dis.*, 1914, xxxii, 705.

⁴ Hutchinson: *Archives of Surgery*, 1891-2, iii, 64.

worse in cold, windy weather. Dermatitis or eczema is very apt to develop upon such a skin.

In slightly more pronounced cases it is noted that body and limbs, and to a less degree the face, are covered by thin scales, that somewhat resemble fish scales. Again the skin is dry and rough and there



Fig. 8.—A case of ichthyosis of more than average severity. (Gilchrist's case.)

is considerable shedding of the scales. The scales vary in size and shape, but are usually a centimeter or more in length and are roughly square in shape. The skin does not bend and fold easily, and there may be fissures around the joints.

In the very severe case the surface practically consists of heavy, horny plates, that look almost like alligator skin, divided by deep fissures, and rendering movement very difficult. In these severe cases the scales are of a dark, dirty color.

There are rarely any subjective symptoms, although after exposure to the weather there may be some burning or itching.

Special Forms.—*Ichthyosis congenita* is the type in which the child is born with a well developed case of ichthyosis. In the cases where there is distortion the term "harlequin fetus" is sometimes applied. Concerning this group there is still considerable confusion. Hebra and Kaposi have considered these cases to be examples of seborrhœa, while Bowen² considers that certain instances are "examples of a persistence of the epitrichial layer, which has usually been cast off by the seventh fetal month, but in these instances maintained its integrity up to the time of birth, when it enveloped the infants like a distinct membrane, such as is found in certain animals. After a short time this membrane begins to peel off in large masses and sheets, leaving the normal skin below in a state of moderate desquamation, which slowly subsides."

Ichthyosis hystrix is probably a separate disease, for it usually occurs in sharply circumscribed areas, and the growths may be quite warty.

Pathology.—The horny layer is markedly thickened, and portions are often found detached in the form of scales: the rete is thinned, especially the prickle layer, in which even the individual cells are diminished in size, as well as in number. The granular layer is usually absent. The papillæ are somewhat flattened out, so are broader and not so high as usual. Slight evidences of inflammatory changes are occasionally found in the corium. The ichthyotic hyperkeratosis also extends into the necks of the follicles, but does not produce horny plugs. The exit may be widely open and filled by a broad, horny plug, or the exit is closed, and part of the follicle converted into a hair cyst. The sebaceous glands are markedly atrophied. The sweat ducts usually open normally upon the surface, and the ducts themselves are but little changed. On the other hand the glands show certain alterations: in exceptional instances they are atrophied, but usually the epithelium is swollen and the lumen dilated. The secretion of sweat is markedly lessened.

Prognosis.—The disease is incurable, and is apt to grow somewhat worse with time. However, it is never fatal. By appropriate treatment much can be done to render the patients suffering from this

² Bowen: Jour. Cutan. Dis., 1895, xiii, 485

affliction more comfortable, and perhaps to even decrease the severity of the manifestations.

Diagnosis.—The diagnosis should usually be easy. Characteristic are the history of long duration, the lack of inflammatory phenomena, the dryness of the skin, and the separation of a thickened horny layer into distinct scale-like particles. The following conditions must be differentiated,—squamous eczema, pityriasis rubra of Hebra, elephantiasis and atrophy of the sebaceous glands in wasting diseases. Squamous eczema follows an acute eczema, it is not congenital: it shows signs of inflammation, and there is usually itching. Pityriasis rubra does not occur in young children: there is a distinct atrophy of the skin, the skin is easily picked up and is not thickened and more or less board-like. Elephantiasis is a local condition that comes on after childhood, due to lymphatic obstruction. Either physical or functional atrophy of the sebaceous glands will cause a drying of the skin that may closely resemble mild stages of ichthyosis. The condition is always an acquired one, however.

Treatment.—Internal treatment is useless, although thyroid extract and pilocarpin have both been advocated, the latter with the idea of increasing the secretions from the glands. The only helpful form of treatment is that which keeps the skin smooth, soft and oiled. Probably one of the best formulas is:

R	Acidī salicylicī	gr. xv	1.
	Ol. ricini deoderat.	3 ii	8.
	Adipis lanæ, q.s.	3 i	30.

In the mild cases a simple glycerine and rose water hand lotion, or cold cream or sweet oil or cocoa butter may suffice. Baths are always indicated, their purpose being to remove the scales. Either plain hot baths or starch baths may be used according to the results obtained.

EPIDERMOLYSIS BULLOSA.

Synonyms.—Epidermolysis bullosa hereditaria; Acantholysis bullosa.

Definition.—A chronic disease, characterized by the formation of bullæ upon slight provocation.

Occurrence.—Epidermolysis bullosa is a rather rare disease certainly not as often seen as ichthyosis. It is usually considered to be even rarer in the negro than in the white, but of this there is no good proof.

Etiology.—The condition is usually hereditary, several children in the family being affected, and some of the ancestors as well. It

usually appears during early childhood, and lasts indefinitely. Engman and Mook⁶ consider it probable that there is a congenital lack of elastic tissue in the upper portion of the corium, and that blebs may result from the separation of the upper layers of skin at this point. These findings have been conformed by various other observers, including Kanoky and Sutton.⁷

Symptomatology.—The lesions usually appear in early life and may come out at any subsequent time. They usually follow slight traumas, and manifest themselves on the legs, fingers and hands, and all parts that are subject to irritation. The primary lesion is a vesicle, sometimes small and sometimes large. It usually ruptures in a short time and healing then takes place. Scars may result from these blebs, although this is not always the case. There is very apt to be atrophy of the finger and toe tips with a coexisting atrophy of the nails. The general health is not affected.

Pathology.—Sections show a vesicle formation taking place just beneath the rete, the basal portion of which is somewhat degenerated. The corium shows a dilatation of the blood vessels and a slight inflammatory infiltration. Elastic tissue is lacking in the upper portion of the corium. The normal skin from other portions of the body shows the absence of elastic tissue in the upper parts of the corium. There may be both a local and general eosinophilia according to Smith.⁸

Diagnosis.—This malady must be differentiated from pemphigus, bullous varieties of erythema multiforme, and from the various bullous manifestations of both drug rashes and various external infections such as impetigo. The fact that the history shows repeated attacks, that the bullae follow trauma, and that they can usually be caused by rubbing the skin with a rough towel will serve to make an accurate diagnosis possible. The coexisting atrophy of the nails should also be a great aid.

Prognosis.—The tendency for bullous formation exists throughout life, but may be slightly lessened with advancing age.

Treatment.—Treatment has no preventative influence. A mild lotion, such as calamine, may hasten healing by preventing infection.

ALBINISM.

Synonyms.—Albinismus; Congenital leukoderma; Congenital leukopathia; Congenital leukasmus; Congenital achroma.

⁶ Engman and Mook: Jour. Cutan. Dis., 1906, xxiv, 55; Jour. Cutan. Dis., 1910, xxviii, 275.

⁷ Kanoky and Sutton: Jour. Amer. Med. Assn., 1910, liv, 1137.

⁸ Smith: Maryland Med. Jour., April, 1901.

Occurrence.—This trouble is very rare, but probably occurs in all races. Partial albinism is most often seen in negroes, the so-called “piebald” type. It is stated that in West Africa there exists a condition of *semi-albinism* in which there is yellow skin.

Symptomatology.—In partial albinism simply the color of the skin alone, or the color of the skin and overlying hair are both white. There is no change in the texture of either. A pinkish tinge that is sometimes seen is probably due to the sun’s rays, for such patches are very susceptible to such irritation. The patches usually remain of the same size throughout life.

In complete albinism the skin of the entire body is snow white, with a slight tinge at times: the irides are colorless and the pupils pink. Photophobia is a direct result of this lack of iritic pigment. Frequently there is weak mental development.

Treatment.—Treatment is useless.

CONGENITAL CANITIES.

Congenital canities usually occurs in the form of white patches of hair, the remainder of the hair being of a normal color. In some instances such an abnormality is distinctly hereditary. In some instances the scalp is likewise white. There is no treatment that avails.

CONGENITAL ALOPECIA.

Synonyms.—Alopecia adnata; Atrichia; Hypotrichosis; Congenital baldness.

Symptomatology.—According to Hyde,⁹ there are three varieties, namely: (1) Intrauterine atrichia—universal absence of hair at birth, this lack being permanent; (2) Universal hypotrichosis—usual lanugo hair at birth, with no later development of the usual hairs; (3) Complete or partial absence of hair in circumscribed regions. The condition may be hereditary. Jackson and McMurtry¹⁰ give an excellent account of it.

Pathology.—This malady is due to an arrested development of the hair follicles. Histological examination shows that both the sweat and sebaceous glands are normal except that the latter open directly into the skin. The hair follicles are atrophic: there are five or six rows of cells, and a central cavity, but no hair. The epidermis is intact, or slightly atrophic.

Prognosis.—The outlook for a complete development of the hair

⁹ Hyde: Jour. Cutan. Dis., 1909, xxvii. 1.

¹⁰ Jackson and McMurtry: Diseases of the Hair, New York, 1912. 73.

is bad. Some hair may develop later, especially in the generalized form. In cases with completely atrophied follicles the outlook is almost hopeless, hence it is advisable to make an histological examination for prognostic purposes.

Treatment.—Time is the best remedy. Various stimulating remedies, such as are later mentioned in the treatment of alopecia, may be employed.

CONGENITAL HYPERTRICHOSIS.

Jackson and McMurtry divide congenital hypertrichosis into two classes, the universal and the partial. The first is a misnomer, for some portions of the body, as the palms and soles, are always free from hair. As a general rule much of the rest of the body is covered with a long fine growth, which follows a definite direction ingrowing, this being away from certain well-defined centers. In some instances there are also defects of the teeth. Other members of the family are frequently afflicted. There seems to be no change in the mental development except that occasioned by shyness.

The partial forms are frequently due to hairy nevi. There are many of these cases upon record.

MONILETHRIX.

Synonyms.—Aplasia pilorum intermittens; Nodose hairs; Spindle hairs.

Definition.—Monilethrix is a congenital disease of the hair, which is characterized by constrictions at intervals along the shaft.

Occurrence.—The disease is rare.

Etiology.—The disease is frequently inherited, and seems to be a deformity rather than an actual disease. Darier suggests that there may be alternating periods of contraction and dilatation of the papillae.

Symptomatology.—The child is usually born with healthy looking hair, which may fall and be replaced by the deformed hair, or which breaks off. There is usually marked keratosis pilaris of the scalp. The hairs are rarely more than a fourth of an inch in length and are often distinctly crinkly. The hairs show alternate constrictions, and the fracture takes place in one of these strictures. Baldness may result. The disease may occur elsewhere than on the scalp: Gilchrist's¹¹ patient had the trouble upon his legs.

Treatment.—Treatment seems to be useless.

¹¹ Gilchrist: Jour. Cutan. Dis., 1898, xvi, 157.

CHAPTER IX.

DISEASES DUE TO LOCAL IRRITATION.

As indicated under the chapter on etiology, many of the most important of the diseases of the skin are due to external irritation. Almost any form of irritation will give rise to a cutaneous reaction, even if direct injury does not result. As a consequence most of the diseases in this group are very acute. The following groups must be considered: (1) Diseases due to mechanical irritation; (2) heat; (3) cold; (4) light; (5) moisture; (6) chemical irritants.

RESULTS OF MECHANICAL IRRITATION OF THE SKIN.

Trauma—this term covering blows, contusions, pinches, friction, scratching and incisions—may cause many types of trouble. We may find erythema, wheals, ecchymoses, blisters, abrasions and deeper losses of tissue, also clean cut wounds that will heal by first intention. Erythema is produced by any slight injury and needs no treatment. Wheals may arise from a stroke with a whip, and usually needs no treatment. Ecchymoses are due to the rupture of blood vessels and the consequent escape of blood into the tissues: treatment is unavailing: a “black eye” can be painted over, but the absorption of the blood can be hastened only slightly by hot compresses. Blisters frequently result from pressure and friction. They should be opened with a sterile instrument and a dressing applied. Superficial abrasions will look after themselves, but deeper losses of tissue need careful treatment according to surgical principles. Incised wounds should be carefully cleaned and then sewed up, with a small drain, if the possibility of infection be suspected.

CALLOSITY.

Synonyms.—Callositas; Callus; Tylosis; Keratoma.

Definition.—A localized, flat thickening of the horny layer of the skin.

Etiology.—A callosity is due to continued friction and pressure. It is a normal defense of the skin.

Pathology.—The horny layer is much thickened, the granular layer is likewise thickened, while the rete and papillæ are thinned.

Symptomatology.—The palms and soles are the usual sites, but these growths may also develop upon the fingers and various other portions of the body that are subjected to both friction and pressure.

The lesions vary in size from a few millimeters in diameter to three or four centimeters. They are grayish or grayish-pink in color, and feel hard and horny. They are usually discrete but may coalesce. They are somewhat elevated in the center and grade off into the normal skin. When pressure is applied to them there may be considerable pain. Infection sometimes takes place beneath them, as in the "beat hand" of the miner.

Treatment.—Callosities upon the feet may be prevented by properly fitting shoes, although these are often very difficult to obtain. In the case of pain it is well to place a ring of some soft substance, such as felt, around the edges so as to remove pressure. They may be softened by a salicylic acid plaster, or by painting the following upon them:

R	Acidī salicylicī	3 i	4.
	Collodion flex.	3 i	30.

It is always best to pare them down first with a sharp knife, in order to save time. After the salicylic acid has been in place for three or four days they should be soaked in hot water, and as much debris as possible scraped off. Then the process should be repeated until a cure is completed. It is difficult to prevent their reformation unless the source of localized pressure is gotten rid of.

CORN.

Synonym.—Clavus.

Definition.—A peg-shaped hypertrophy of the horny layer of the skin, with apex downward.

Etiology.—A corn is due to continued pressure and friction, usually from badly fitting shoes. Most modern shoes do not allow the feet and especially the toes to be held in the normal position.

Symptomatology.—Corns usually develop upon the outer and upper part of the skin over the proximal joint of the first toe, but may develop near any of the other joints. A corn differs from a callosity only in its smaller size, and its conical shape, the apex being pointed downwards into the tissues. The ordinary or "hard corn" feels horny and is raised above the surface. It is usually painful, for pressure forces the apex downward. The "soft corn" is situated between the toes, upon the side of one of them, and the softness is caused by the moisture present: it is usually depressed in the center, and is often more painful than the other variety.

Pathology.—The pathology of corns is very similar to that of callosities. The essential difference is that the growth of horny tissue, instead of being flat, is triangular or conical, the base being on the

surface and the apex pointed downwards. The substance of the corn consists of proliferated horny cells, while the rete and papillæ are both thinned from pressure.

Treatment.—The essentials of treatment are the same as in callosities. A good chiropodist can often completely remove a corn, so that there will be no further trouble for several months. In the treatment of soft corns it is often well to start in with a dusting powder, the following being especially valuable:

R	Acidī salicylicī	gr. xv	1. ♦
	Acidī boricī	3 i	4.
	Pulv. talc.	3 i	30.

DISEASES DUE TO HEAT.

Burns result from heat, especially moist heat. They are of three varieties, those of the first, second and third degree. In the first there is an erythema, in the second vesicle formation and in the third necrosis and loss of tissue. They are so fully covered in the text books on surgery that it is useless to say much concerning them. In the first two groups mild lotions or powders should be used, while in the latter the open air treatment is the best. The parts are carefully cleansed and left exposed to the air. By employing this method very much better cosmetic results can be obtained than by any other.

A macular pigmented eruption may result from exposure to heat. This is especially marked in the case of stokers, foundry workers, cooks, etc.

MILIARIA.

Synonyms.—Prickly heat; Heat-rash; Strophulus.

Definition.—An acute disease of the sweat ducts, due to excessive perspiration.

Etiology.—Intense heat during the summer, working in artificial heat, wearing too heavy clothing, too heavy clothing and the drinking of alcoholic beverages may cause this trouble.

Symptomatology.—The lesions usually predominate on the trunk, especially the chest. The lesions are very numerous and are closely crowded together. They are either minute vesicles or papules, vesiculo-papules, or a combination of the three, although one type of lesion most frequently predominates. The vesicles are acuminate in shape, and do not tend towards spontaneous rupture: the papules are likewise pointed rather than flat. In all instances the individual lesions are surrounded by an areola of erythema. The subjective symptoms may be severe or mild: they consist of itching and burn-

ing. The trouble usually clears up spontaneously in from four days to one week, but secondary infection may occur, or an eczema may become superimposed.

Pathology.—Regarding the origin of these lesions there are three different views: (1) that it is an inflammatory disease of the epidermis and not alone of the sweat ducts: the vesicular lesions are connected with the sweat ducts (Robinson);¹ (2) the vesicles are due to dilated sweat ducts, the papules to cysts filled with cellular elements and to inflammation in the neighborhood of the ducts and pores (Pollitzer)²; (3) that no connection between the sweat duct and vesicle can be found, and that the lesions are caused by the irritation of the sweat upon the surface (Török).³ Histological examination shows that the cyst is just beneath the horny layer, and that the sweat duct opens into it, only Török differing on this point. The papillary blood vessels are dilated, but there is very little cellular infiltrate. The cells of the horny layer are swollen and preserve their nuclei, in a somewhat modified form.

Diagnosis.—The exact difference between this disease and miliaria rubra needs to be studied. Unna⁴ considers the latter to be a true catarrh of the skin and that the vesicles develop independently of the ducts.

Sudamen might be confused, but this latter malady develops only in connection with severe constitutional diseases, and manifests no subjective symptoms. An acute vesicular eczema is not so wide-spread and is much more inflammatory.

Prognosis.—In the majority of cases the prognosis is favorable, for the trouble rarely lasts more than a week, and often a much shorter time. However, if the same etiological factors persist another attack is likely to supervene very shortly. Furuncles or eczema may arise as a complication.

Treatment.—An attempt should be made to keep the patient cool, or to stop the indulgence in alcohol, if drinking of that beverage appears to be a factor. The surface of the body can often be cooled by the application of a dusting powder, which increases the area of evaporation. The most useful powders are zinc oxide, talcum, zinc carbonate and other impalpable powders, either singly or in combination. Alcoholic lotions are often useful, one containing 15 gr. of menthol to 6 oz. of alcohol often being especially grateful. Absolute cleanliness is of the utmost importance. Where there is a tendency

¹ Robinson: Jour. Cutan. and Ven. Dis., 1884, ii, 362.

² Pollitzer: Jour. Cutan. Dis., 1893, xi, 50.

³ Török: Abs. in Monatsh. f. prakt. Dermat., 1891, xiii, 437.

⁴ Unna: Histopathology, 908.

to pus formation the yellow oxide of mercury ointment may be employed in the strength of 15 gr. to the ounce. Curiously enough, negroes seem to be affected more frequently than whites.

DISEASES DUE TO COLD.

Chilblains, frost bite or dermatitis congelations are stages of one malady. In certain persons suffering from an impaired peripheral circulation the skin may appear livid during cold weather, this being due to a persistent hyperæmia, and may itch and burn. In more marked cases there may be vesicle formation, while in the third degree there is some loss of tissue. Lupus erythematosus may be differentiated by the gaping follicular mouths, the presence of a crust and scar formation, while in Raynaud's disease the symptoms are more intermittent and there are periods of anæmia. Inasmuch as the coagulation time of the blood is increased, doses of calcium lactate may be employed, a good prescription being:

R	Tet. capsici	℥ viii	.5
	Cal. lactat.	gr. clx	10.04
	Aquæ chloroform.	O i	500.

The parts must always be kept warm. The hygiene must be carefully looked after, and the attempt made to tone up the circulation. Locally there should be some stimulation, such as is furnished by the tincture of iodine. In vesiculation mild antiseptic dressing should be employed, boric acid ointments acting admirably.

So far as the author has been able to observe negroes do not suffer more severely from this disease than do whites.

DISEASES DUE TO LIGHT.

Excessive exposure to sunlight, to concentrated artificial light, such as used in phototherapy, to the Röntgen rays or to radium, will produce certain untoward effects upon the skin. Continued mild exposures will cause either freckles or tanning, an effort upon the part of the body to protect itself. Sudden severe exposure will produce an erythema that may go on to vesiculation. Both the X-rays and radium, and the rays from the various strong artificial therapeutic lamps, will cause destruction of tissue.

SOLAR ERYTHEMA.

Synonym.—Sunburn.

Definition.—An acute erythema due to too long exposure to the sun's rays.

Etiology.—Prolonged exposure to the rays of the sun, either direct or reflected will cause a more or less intense erythema. The rays from the blue end of the spectrum are the more active. Blondes suffer much more than do brunettes, hence the negroes are almost exempt. Those who have not as yet become bronzed are the more apt to suffer: as one becomes tanned the liability to sunburn greatly decreases.

Symptomatology.—The skin of the exposed parts becomes intensely red in the course of a few hours. There is usually some swelling, and there is usually intense burning, which becomes better in a few hours. By the end of the third day most of the signs and symptoms of an acute inflammation have subsided, and there remains only some desquamation, which is followed by pigmentation. A similar dermatitis occurs in workers in electric furnaces, according to Oliver.⁵

Pathology.—There is intense congestion of the blood vessels and considerable increase in the cellular elements of the skin, chiefly small round and fixed tissue cells.

Diagnosis.—Acute erythematous eczema or erysipelas can be differentiated by the history of exposure to sunlight, and also by the distribution of the erythema, only those parts exposed to the light being affected.

Treatment.—Soothing lotions should be used: calamine lotion with the addition of a little menthol is excellent. The trouble can usually be prevented by wearing a veil, or by covering the face with a red ointment.

FRECKLES.

Synonyms.—Lentigo; Ephelides.

Definition.—Small, discrete exudations of pigment in the rete, due to localized pigment.

Etiology.—Pigment formation, either localized to small areas, as in freckles, or generalized as in tanning, is a defensive act on the part of the body, to chiefly protect against light, but also against heat and cold. Blondes, especially those with sandy hair and a rather yellowish skin, are the most prone to lentigo. Many mulattoes are studded with them upon exposed parts.

Symptomatology.—Freckles are small roundish or irregular patches of pigment, varying in color from a pale yellow to a deep brown, and occurring chiefly on the face, backs of hands and wrists, and occasionally upon covered portions of the body. They are more common during childhood and early life than during later years.

⁵ Oliver: Diseases of Occupation, 354.

Naturally they are most marked during the summer months. Those who have many freckles rarely tan to a great extent.

Pathology.—There is an increased amount of pigment in the basal layers of the rete. In some instances hypertrophy and snaring off of epithelial elements have been described, but these are probably examples of soft nævi.

Diagnosis.—Only two conditions must be differentiated. One is xeroderma pigmentosum, in which there is an abnormal dryness of the skin at an early age, together with the formation of atrophic areas and telangiectases, and keratotic growths at a late age. The other condition is the senile wart, in which there is marked scaliness, with the later development of a crust.

Treatment.—Treatment is unsatisfactory, and it is best to let freckles alone. During the summer they are sure to return, even if removed, but in the fall treatment is sometimes effectual, at least until the following summer. The object of the treatment is to remove the upper layer of epidermis including the pigment. Such drugs as mustard and cantharides will remove the upper layer of the skin but will also cause an increased deposit of pigment in many instances. The best drug to use is the bichloride of mercury, which, by the way, is contained in many of the patent freckle removers. This remedy is applied in the form of a lotion, in the strength of 1 to 4 grains to the ounce of water. It should be dabbed on several times each day until a peeling is produced. Stelwagon also recommends the following lotion:

R Hydrar. chlor. cor.	gr. vi	.4
Tct. benzoïn.	3 ii	8.
Zinci sulphat.	gr. xxx	2.
Alcohol		
Aquæ, ãã q.s., ad	3 iv	120.

Hydrogen peroxide solution in full strength will sometimes work well, but is frequently disappointing. The skin may be peeled off with a strong salicylic acid and resorcinol paste, using about a dram of each ingredient to the ounce, or by touching with pure phenol, and then with alcohol. The peeling process will be fully described in dealing with the treatment of acne vulgaris. There is always a certain risk of scarring the face, or of making the pigmentation worse. This last is especially true in the negro race. A physician should never undertake to treat freckles without explaining that there are certain dangers.

TAN.

Tan, or the diffuse formation of pigment in the skin, is entirely a protective action on the part of the body, with the object of guarding

against possible injury that might be caused by the sun's rays. Persons are occasionally desirous of having this pigment removed, but this is also a somewhat risky procedure, just as in the case of freckles. The treatment is the same as in that trouble.

X-RAY DERMATITIS.

The X-ray produces two radically different types of dermatosis, the acute and the chronic. The acute type is called the X-ray burn, and of this there are three stages—the first, second and third



Fig. 9.—Chronic X-ray dermatitis. Note the atrophy and wrinkling of the skin, and the keratoses. Such a skin is very apt to become cancerous. (Collection of Dr. Richard L. Sutton.)

degree burns. The first degree burn is a simple erythema, that may not come on for from ten to twenty days after exposure to the rays. The hair may temporarily fall out upon the exposed surfaces, but the reaction usually subsides in a week or ten days, unless it be a cumulative reaction, the result of many small treatments. In this case the reaction may be more severe and much more prolonged. After the erythema there may be some desquamation, and often some pigmentation. The second degree burn is at first a marked dry dermatitis that speedily goes to vesiculation, the vesicles speedily rupturing and leaving a raw surface. As a variety of second degree burns are found those in which there is very intense

congestion that cannot be removed by pressure. When the vesicles rupture there develops upon the raw surface a thin, gray necrotic membrane. These burns usually subside without any destruction of the connective tissue, and they usually heal in from four to five weeks. In the very severe burns there is necrosis of the corium and consequent ulcer formation, and this ulcer is rather peculiar. In the center there is a hard, leathery mass of mummified tissue, which is surrounded by an inflammatory areola. The pain is usually very intense. After the more severe forms have healed there often remain in the skin changes that are comparable to the chronic type of dermatitis.

The chronic type of X-ray dermatitis develops most frequently in the X-ray operator, or in one who has been subjected to very numerous, small treatments. The first change noted is a pigmentation. The next change is a marked dryness of the skin, often with loss of the hairs. Still later comes the formation of small keratoses, a general slight atrophy of the skin, telangiectases and atrophy of the nails. Cancer may develop in these hyperkeratoses, and when it does so, is usually of the prickle-celled type, although it may be of the basal-celled variety, and usually ulcerates rather extensively as well as forming metastases to the neighboring glands.

Slight X-ray burns can be treated just as are other mild burns, using calamine lotion or a dusting powder in the early stages. Wet dressings of normal salt solution are recommended by Pusey for second degree burns, although sometimes he prefers a boric acid and rose ointment. In the deep burns the best treatment is complete excision and a plastic operation. The failure of these burns to heal may possibly be accounted for by an endarteritis of the blood vessels that supply the parts. In the chronic dry condition simple ointments are valuable for the purpose of softening the skin. The keratoses should be excised as soon as they appear. In the development of cancer the treatment must be suited to the type of cancer that has arisen, as will later be pointed out.

On the whole, prevention is much better than treatment. The operator should never expose himself to the rays of his tube. He should always work from behind a lead screen. The penetration of the tube should be determined by a penetrometer, not by testing upon the hand with a fluoroscope. Parts of the patient that it is not wished to expose should be protected. Lead foil should be placed around the lesion.

RADIUM DERMATITIS.

The alpha rays may cause a superficial dermatitis. Prolonged action from the rays of radium, presumably the gamma rays, will cause a

destruction of tissue comparable to that which occurs from the Röntgen rays. There is often considerable pain, healing is very slow, and it is probable that there may be permanent changes in the skin and connective tissue, such as are produced by the X-rays. The treatment is the same as for X-ray dermatitis.

DISEASES DUE TO MOISTURE.

If the skin, or any portion of it, is subjected too much to water, be it hot or cold, and be it free from soap, the grease of the skin will be removed and the skin liable to chap, or to become the seat of a more or less acute dermatitis. In persons who use soap this is usually much worse.

HIDROCYSTOMA.

Synonyms.—Hydrocystoma; Cysts of the coil-ducts.

Definition.—A chronic, non-inflammatory dilatation of many of the sweat ducts of the face, caused by an excess of steam or moisture.

Occurrence.—Rare, only occasionally encountered even in large clinics.

Etiology.—The disease nearly always occurs in the faces of middle-aged women, and especially in those who have been much subjected to steam or a moist atmosphere. Over ninety per cent of the subjects of this disorder are of the female sex. Schidachi^a has been able to reproduce similar lesions in animals by making transverse incisions through the epidermis and blocking the sweat ducts.

Symptomatology.—The disease chiefly affects women past middle life. The face is the site of the disorder. It is much worse during hot weather, or when there is much sweating. The lesions are usually very numerous, they are of various sizes and are discrete, although they may be closely crowded together. The primary lesion is a deep-seated vesicle, which is roundish, translucent, shining, tense, of a light yellowish color, and which protrudes slightly beyond the level of the skin. There are no inflammatory symptoms. The lesions give no subjective symptoms. They are persistent, remaining for weeks or months before absorption takes place, and the contents does not become purulent.

Pathology.—The site of the lesion is in the sweat duct, the cyst forming in the corium. It usually begins in the deeper part, and eventually, as it grows, encroaches upon the epidermis. The rete, hair follicles, sebaceous glands, sweat glands, blood vessels and lymphatics are not affected. The cyst wall is lined by two layers of epi-

^a Schidachi: Arch. f. Dermat. u. Syphil., 1907, lxxxiii, 3.

thelial cells, which take their origin from the normal epithelium of the sweat duct, and are changed only because of the pressure upon them. The contents consists of retained sweat.

Diagnosis.—A number of diseases must be differentiated. First in importance are the multiple benign cystic epithelioma, syringocystadenoma, sudamen, pompholyx, vesicular eczema, adenoma sebaceum or adenoma of the sweat glands. The lesions of multiple benign cystic epithelioma do not tend to disappear in winter, they are not so frankly cystic, but are rather solid and when pricked show no fluid contents. The histological structure is radically different. The lesions of syringocystadenoma are very apt to affect the body, they do not tend to disappear, and are solid. The lesions of sudamen are transitory and are much more superficial, and more apt to be situated upon the trunk, and are associated with cachexia. The lesions of pompholyx are confined entirely to the hands and feet. Vesicular eczema is more acute, is markedly inflammatory and itches intensely. The lesions of adenoma sebaceum are of a red color. True adenoma of the sweat ducts or glands are not so numerous, and are usually much larger tumors.

Prognosis.—The disease is not a serious one: it only causes disfigurement. However it does not clear up except in winter. With avoidance of steam and with proper treatment the condition can be remedied.

Treatment.—Steam should be avoided. The lesions should be punctured and a simple dusting powder sprinkled on the face.

DISEASES DUE TO CHEMICAL IRRITANTS.

INTERTRIGO.

Synonyms.—Chafing; erythema intertrigo.

Definition.—Intertrigo is a hyperæmia of the skin, often with maceration, occurring between opposed surfaces of the skin.

Occurrence.—According to the figures gathered by Pollitzer, intertrigo constitutes one-fourth of one per cent of all skin troubles. However in children this disease is really common, although it often does not come to the attention of the dermatologist. It seems to be much more common in whites than in negroes.

Etiology.—It is still questionable whether intertrigo arises from friction, from maceration by moisture, from bacteria growing in the almost ideal culture medium furnished by sweat retained between opposing surfaces, or from chemical irritation caused by decomposition of the sweat. It is probable that all of these factors may play some part, but the relative importance of each has not as yet been deter-

mined. At any rate it is known that the disease arises where skin surfaces come in contact, especially if they remain moist for any length of time. In children it is usually due to neglect in not changing the napkins as soon as soiled. In adults diabetes mellitus, with its deposit of sugar upon the genitalia, may cause a similar affection.

Symptomatology.—Children are more often affected than are adults, and women more frequently than men. The regions usually involved are the diaper region of children, the inner surfaces of the thighs of adults, and the skin beneath the breasts of women. Stout men and women are naturally more often afflicted than are thin persons. Children whose soiled napkins remain upon them are especially liable to develop this trouble.

The onset is usually acute, often within a couple of hours. The first evidence is hyperæmia, usually attended by a feeling of heat and soreness. In the early stages there is no induration, and usually no discharge. If the condition progresses the skin becomes macerated. The outer surface of the skin is lost and there is a serous discharge. Infection of a frankly purulent type may supervene, or a severe form of eczema may result, but as a general rule the most severe signs are intense hyperæmia, maceration of the skin and the serous discharge.

Pathology.—The pathological picture depends upon the degree of the trouble. The horny layer is often missing, and the granular layer reduced in thickness. Both the rete and corium show marked evidences of inflammation. The blood vessels are dilated and many leucocytes have escaped into the tissues.

Diagnosis.—In adults the diagnosis is usually very easy: the occurrence between contiguous surfaces, usually on stout people, is almost characteristic: in addition the lack of infiltration and the sudden onset make a picture that cannot be mistaken. Only eczema will cause trouble, and eczema of these parts is essentially the same malady.

In children it does not seem necessary to separate the “napkin erythema” from intertrigo as Jacquet⁷ has done. The two affections, in the judgment of the writer, are essentially the same, differing only in degree. However, three diseases must be differentiated, the most important of which is congenital syphilis. In this last malady the lesions are usually discrete papules, or more rarely macules, and other portions of the body are frequently affected, especially the palms and soles. Usually there are other signs of this infection.

Schorrhic dermatitis is rare, and is only exceptionally confined to the napkin region. There is usually some infiltration and some scalliness. In impetigo there are evidences of infection in other portions

⁷ Jacquet: *La Pratique Dermatologique*, i, 881.

of the cutaneous surface. Adamson⁸ has written an excellent article upon these diseases.

Prognosis.—The prognosis is excellent. Removal of the cause and appropriate treatment will affect a speedy cure in the vast majority of instances.

Treatment.—The first essential is absolute cleanliness. When the irritation is very acute washing should be done with oil or with starch water. Soap should not be used. Gauze or absorbent cotton should be kept between the opposing surfaces, and these are to be changed as soon as they become moist. Wet napkins must never be left on a child. In rare instances where the stools seem to be especially irritating a careful study of the child's digestion must be made. Many clinicians give a little bicarbonate of soda by mouth, holding that there is "an acidity of the urine," a point by no means proved. Ointments should not be used in the acute cases. Powders are usually much better than lotions and should be applied freely. A combination of one part of boric acid and two parts of zinc stearate is often excellent, but many other powders can be used with success. In some cases the well-known calamine lotion is also excellent. When the skin becomes more nearly normal it may be necessary to grease it with some bland ointment, such as zinc oxide, in order to protect it against frequent stools.

PROFESSIONAL AND TRADE DERMATOSES.^{9, 10}

As already pointed out in the chapter upon etiology, many workers in various fields suffer from various dermatoses because of the irritating substances with which they are brought in contact. As a general rule these lesions resemble either an acute dermatitis or an eczema: in fact the lesions are identical. In other instances, however, either ulcers or even carcinoma may result. The following deserve some consideration:

Aniline dye workers are especially apt to suffer from an eczematous condition of the hands. Both the makers and users are liable to this trouble, so it is very widespread, and has attracted much attention, especially in Germany.

Arsenic is very apt to cause either eczema, ulcers or furuncles; not only the chemical workers suffer, but also those who use it in the arts, especially furriers and taxidermists, since arsenic is much used in preserving skins.

⁸ Adamson: Brit. Jour. Dermat., 1909, xxi, 37.

⁹ Knowles: Jour. Cutan. Dis., 1913, xxxi, 11.

¹⁰ Hazen: Jour. Cutan. Dis., 1914, xxxii, 487.

Bakers often suffer from an acute eczema of the hands and face, often with secondary involvement of the body. This is probably due to the moist dough and the saccharin solutions, although it has been attributed to a mite in the flour.

Barbers have eczema of the hands and fingers because of having their hands so much in water, and also because of their use of various hair lotions and dyes.

Bartenders are prone to eczema, not because of their use of water alone, but also from the spilling of alcoholic beverages over their hands.

Bleachers and cleaners are great sufferers, the trouble being generally attributed to benzine, chloride of lime or acids.

Borax workers, both those who gather it and those who use it, especially scrub women, suffer greatly from chronic eczema.

Bricklayers are affected because of the wet mortar.

Bronze workers suffer not only from boils, but from eczema as well, probably due to the metallic dust plugging the sebaceous ducts.

Canners are very apt to suffer from acute eczema of the hands, either because of the moisture, from chemicals used to preserve foods, or because of the substances used in sealing the cans.

Cement workers have eczema as a result of their hands coming in contact with the cement. Portland cement is said to be especially irritating.

Chemical workers are especially apt to suffer. The manufacture of certain chemicals is prone to set up an irritation. Among these may be included arsenic, calcium chloride, caustic soda, hydrofluoric acid, opium, potassium bichromate, sulphuric acid and tar. *Druggists* and *chemists* often have eczema, especially of the finger tips. *Physicians, surgeons, medical students, nurses, hospital attendants* and *laboratory workers* have dermatitis from the use of various disinfectants, chiefly formalin, bichloride of mercury and potassium permanganate and oxalic acid.

Cloth handlers are frequent sufferers, although the reason is not known, unless it be due to the dyes or to the irritating properties of the wool fibers.

Coopers have eczema due to the caustic soda used in cleaning the barrels, and the paint used in refinishing them.

Dyers are very apt to suffer, especially those using the aniline dyes; the workers in the dye houses of the mills have eczema much more frequently than any of the other employes.

Electroplaters are affected because of the sour beer used in the trade. The scratch brushers, chiefly women, are the main sufferers. A soap bark preparation has displaced the sour beer in many of the

shops, and eczema is now much less prevalent. The *polishers of silver* also become affected, probably because of the rouge used in polishing. This rouge consists of mercury, iron and wax. Some of the French polishers use potassium cyanide or bichromate, and hence are very liable to cutaneous troubles.

Enamelers have outbreaks because of the various chemicals they employ.

Flax workers suffer, not only from an acute form of eczema, but from ulcers as well, because the threads they handle are passed through hot water containing lactic and butyric acid in order to remove various impurities. The drippings get on the bare feet of the employes, so similar conditions are found there.

Flour workers, millers, bakers, grocers and cooks suffer from a squamous form of eczema, which may, or may not, be due to a mite in the flour.

Fruit handlers frequently suffer because of the irritating properties of the fruit juices.

Furniture polishers may suffer from a very acute form of dermatitis, probably caused by the methyl alcohol in the polish.

Furriers are frequent victims, doubtless because of the arsenic in the furs; this is often present in a quantity greatly in excess of that allowed by law. In some instances the eruption may be due to dyes. The *wearers of furs* are also prone to similar troubles.

Glass workers are suffers because of their hands coming in contact with hydrofluoric acid or copper sulphate.

Gold refiners, who extract the metal by the potassium cyanide method, are frequently affected.

Grocers have eczema, presumably because of the sugar and flour that they handle.

Hair dye makers and users frequently have an acute form of eczema. In recent years a large series of such cases has been published in the various American medical journals.

Hat makers, especially those who have to do with the moulding and dyeing, frequently have eczema, which may be caused by the handling of acids, of dirty water or of the hair of animals.

Houseworkers, including wash women, maids and all whose hands come much in contact with soap and water, form the largest class of dispensary patients. Those using much borax or strong alkaline solutions are the most apt to suffer.

Ice men are liable to dermatitis, because of the cold and moisture to which their hands are subjected.

Ice cream makers suffer for the same reason.

Laborers have dermatitis because of the various irritating sub-

stances that they handle, and because of the amount of soap and water that they are forced to use.

Lacquer workers are very apt to have a dermatitis venenata because of a poisonous oil in the lacquer. The Chinese lacquer workers are said to wear gloves while engaged in their trade.

Laundry workers are frequently seen in the dispensary because of a papular eczema of the hands and forearms, caused by alkalis and water.

Leather workers suffer because of aurantia, a cheap dye used to stain leather, and also because of the arsenic used in its dressing.



Fig. 10.—Trade eczema. This man acquired eczema nine months ago while making ice cream. Previous attacks had cleared up when he ceased work but the present attack has failed to do so, although it has gotten much better. Clinically the condition is a typical eczema, but it was induced by the occupation.

Linoleum makers have eczema excited by crude naphtha.

Masons have a dermatitis excited by Portland cement and by mortar.

Match makers were formerly the victims of phosphorus poisoning, but since sesquisulphide of sulphur has been substituted conditions are much better, although it is admitted that this chemical not infrequently excites dermatitis of the hands.

Mechanics may suffer because of the use of the petroleum products.

Moving picture operators have eczema and fissures upon the fingers

that come in contact with the cement used to piece films. This may be avoided by the use of flexible collodion.

Mother of pearl workers are afflicted because of the fine dust caused by their work.

Painters may have cutaneous irritations due to either turpentine, shellac or methyl alcohol. Shellac frequently contains arsenic.

Paperhangers are great sufferers because of their hands coming in contact with the paste. They are also affected by the dyes used in the papers, especially arsenic.

Paste handlers, especially bookbinders, are frequently troubled by eczema. When the pastes are made from glue they are especially irritating.

Photographers suffer from coming in contact with metol, and auto-type photographers because of the potassium bichromate and platinum.

Plant handlers are often affected. Gardeners, florists, farm hands, housewives and all classes of people whose work or pleasure brings them in contact with plants are included under this heading.

Plasterers suffer because of the lime in the plaster.

Porcelain workers have a form of acute dermatitis due to turpentine.

Printers suffer from dermatitis as a result of coming in contact with benzine, impure turpentine, oil, lye, acids and soap.

Soap makers suffer from the alkalis.

Sugar workers suffer from dermatitis, and boils and lymphangitis are not uncommon.

Tanners are frequently affected with dermatitis because of lime, potassium bichromate, muriatic acid and arsenic used in the curing, tanning, and dyeing of hides.

Tobacco workers have eczema, often of a chronic form, apparently due to handling the leaves.

Woodworkers have dermatitis, excited by the resinous dusts in cocus wood, East India satin wood, teak wood, ebony and rose wood. This is due to oil probably analogous to toxicodendrol.

The prevention of trade dermatoses rests upon identifying and avoiding the poisonous substances. In many instances a poison will affect only one of a group of men handling it: the element of personal susceptibility can never be dismissed. In some instances the wearing of gloves will cure an attack, in other instances it may be necessary to discontinue work for a time, and in other instances a change of work will suffice. In many of the large industrial plants provision is made for moving a man from one job to another when a dermatitis

develops. In some cases the hands should frequently be washed in order to remove any irritating substances, in other cases water will act as an additional irritant to the inflamed skin. The hands should always be thoroughly dried, and softened by the use of some simple ointment. All abrasions should be sealed with collodion.

DERMATITIS DUE TO THE LOCAL ACTION OF DRUGS.

Many common remedies that are locally applied to the skin may, in some susceptible individuals, cause a more or less severe dermatitis that may vary in form from a simple erythema to a severe vesicular dermatitis.

The following must be briefly mentioned:

Arnica may cause a localized papular eruption: in some instances this will spread far beyond the treated area.

Balsam of Peru is very apt to cause a severe erythema, sometimes even vesication.

A *belladonna* plaster may cause considerable local trouble.

Oil of cade, especially if applied to hairy parts, may set up a follicular dermatitis, that often goes on to suppuration.

Cantharides very frequently cause vesiculation, from which keloids may result.

Chrysarobin not infrequently causes a violent dermatitis, usually of an erythematous character. There is a marked brownish tint to the skin. This eruption may spread beyond the area treated, although this is exceptional.

Croton oil usually causes pustulation.

Iodine may cause an erythema or marked vesiculation.

Iodoform occasionally sets up an acute erythema. This is often followed by considerable desquamation.

Mercury, in the non-hairy parts of the body, may cause erythema, while in the hairy portions a suppurative folliculitis may result.

Mustard plasters can cause considerable vesiculation which is often followed by an increased pigment deposit.

Peroxide of hydrogen may cause erythema and vesication.

Pyrogallic acid can cause an acute inflammation, often with considerable œdema.

Sulphur is stated to be a common cause of dermatitis: to my mind this must be very infrequent, although it undoubtedly does occur.

Tar acts as an irritant to many people. It is especially apt to affect the hair follicles.

Turpentine can set up vesiculation.

DERMATITIS DUE TO THE LOCAL ACTION OF PLANTS.

In America the cases of dermatitis due to plants are usually caused by members of the *Rhus* family. Because of certain peculiarities this form of dermatitis must have a separate handling. The other plants most often responsible are *urtica dioica* (nettle), *mucuna pruriens* (cowhage), *polygonum punctatum* (smartweed), *podiphyllum*, *balsamum Gileadense* (balm of Gilead), *nerium oleander* (oleander) and *ruta* (rue). The *chrysanthemum* may also cause trouble. One of the commonest and most frequently unrecognized causes is the *primula* or primrose. Forster¹¹ has written an excellent article upon this plant, and finds that the irritation is due to a secretion from the plant, and that alcohol dissolves this secretion. The lesions caused by these plants are usually vesicular in character. They occur not only upon the parts exposed to the plant, but may be transferred by the hands to other portions of the body as well.

All of these different forms of acute dermatitis or dermatitis venenata are best treated by abstaining from the use of soap, by the very sparing use of water, usually bathing with an oily substance, and by the local application of a dusting powder or of calamine lotion as directed under the treatment of acute eczema. For the relation of acute dermatitis to acute eczema see the etiology of eczema.

RHUS POISONING.

Definition.—An acute irritant dermatitis set up by coming in contact with one of the species of *rhus*.

Etiology.—The following account of the etiology of this affection is largely taken from the admirable work of von Adelung.¹² The plants are the poison oak (*Rhus diversiloba*), poison ivy (*Rhus toxicodendron*) and poison sumach (*Rhus venenata*). The poison ivy is found in the United States as far west as the Rocky Mountains. The plants are very similar to each other, being climbing or trailing vines. The berries and blossoms are green and extremely poisonous.

Pfaff¹³ was the first to show that the poisonous principle is "toxicodendrol," a non-volatile oily substance. Contact with the poison is necessary, but as the poison may be carried on fine particles of the plant, wafted by the wind, or carried on other substances to which it has been accidentally transferred, actual contact with the plant is not necessary. Smoke from burning plants has been demonstrated

¹¹ Forster: Jour. Amer. Med. Assn., 1910, lv, 642.

¹² von Adelung: Arch. Int. Med., 1913, xi, 148.

¹³ Pfaff: Jour. Exper. Med., 1897, ii, 181.

to cause the dermatitis. It is certain that some people suffer more than others, but the probabilities are that everyone is more or less susceptible.

Symptomatology.—Men and women seem to be about equally susceptible. Children are probably most often seen by the physician, for they are rather more apt to come in contact with the plant than are their elders. The disease usually comes on within a few hours after exposure, and within twenty-four hours there are always marked signs of cutaneous irritation. The eruption is most prominent on the backs of the hands and forearms, and the face is usually involved, either primarily or secondarily, probably the latter in the majority of instances, inasmuch as the lesions usually appear there at a trifle later date than upon the hands. In men the penis is often involved, due to the poison being conveyed by the hands. At first



Fig. 11.—Poison ivy in a negro three days after exposure. Many dermatologists claim that poison ivy does not affect the colored race.

there is a marked erythema with some swelling, but in a short space of time very numerous vesicles, about pin head in size, begin to appear. These may coalesce to form vesicles of several centimeters in diameter. In certain instances these vesicles may be arranged in rows, undoubtedly due to scratching. The lesions usually rupture in two to four days, leaving a raw surface.

The subjective symptoms are usually very intense. The sensation of burning usually predominates, although there is some itching, and often a feeling of great tension.

Pathology.—The vesicle formation is superficial. The corium shows evidences of intense inflammation.

Diagnosis.—The occurrence of closely grouped vesicles upon an inflamed base, situated upon the hands and face, and following exposure to the plant makes the diagnosis easy. Other varieties of dermatitis venenata must be ruled out, but in them the distribution is usually different.

Acute vesicular eczema, usually of the recurrent type, and situated between the fingers or upon the hand, is often falsely called ivy poisoning. This type of eczema can usually be recognized by its slower onset, its longer duration, and by its distribution. Usually there is a history of attacks when there has been no exposure to the plant.

Prognosis.—The prognosis of ivy poisoning is good. The patients usually are well in two weeks. There is comparatively little danger of secondary infection.

Treatment.—Poison ivy is often incorrectly treated. The fact that the poison is an oil, soluble in alcohol, is of the greatest importance. For prophylactic purposes a thorough washing with alcohol, immediately after exposure is an almost sure preventative. If the cases are seen early the skin should be rubbed with a rough towel and then very freely washed with alcohol. In this way the duration of an attack can often be greatly shortened. If the lesions are more than twenty-four hours old it is well to apply mild solutions of potassium permanganate for a few minutes, it being claimed that this substance will oxidize the poison. Then they should be treated with calamine lotion or some other soothing lotion or powder. One formula that is often useful is:

R	Fl. ext. grindellæ robus.	3 iii	12.
	Aquæ, q.s.	5 vi	180.

Occurrence in Negroes.—It is usually stated that the full-blooded negro is almost immune to ivy poisoning. In my experience, based upon the observance of several thousand cases of skin disease in that race, the negro suffers just as often and just as severely as does the white. It must always be borne in mind that the city negro does not often go into the country, and hence that he is not so often affected, but, that the country negro very frequently acquires it.

DERMATITIS ARTEFACTA.

Definition.—Dermatitis artefacta is an intentionally self-produced eruption.

Occurrence.—The disease is only infrequently encountered by the dermatologist. It appears to be one of the rare diseases, but nevertheless one of the most important, especially from the neurological and sociological standpoints.

Etiology.—The disease is produced by the patient, usually with the idea of exciting sympathy or evading work. The patients are usually hysterical women, or those desiring to secure admission to some institution. The lesions are produced in a wide variety of ways, sometimes by mechanical means, but more often by applying some chemical. It is often extremely difficult to determine the means employed, for the patients are only rarely detected in the act.

Symptomatology.—The type of dermatitis depends entirely upon the means of production. According to Sequeira, the following points should be noted: (1) The lesions do not conform to the known types of disease; (2) They are in parts that can easily be reached by the patient's hands; (3) The lesions are remarkably circumscribed, the surrounding skin being normal. Their outline is often rectangular; (4) In the hysterical there are often changes in the field of vision, and anæsthesia of the palate. In addition it should be noted that if the lesions are carefully sealed up they usually disappear. Furthermore the casual suggestion that in disease of this type it is usual for a similar lesion to appear in some particular area is frequently followed by the development in this place.

It is usually very difficult to obtain cooperation from the family, as they are much more apt to take the patient's view of the case.

Treatment.—All of these cases should be treated by the expert neurologist rather than by the dermatologist. Local treatment consists in the application of fixed dressings.

PARAFFIN PROSTHESIS.

For a number of years there has been a tendency upon the part of some "beauty doctors" and a very few physicians to inject paraffin beneath the skin in order to eradicate scars, depressions or wrinkles. Too often this paraffin has formed into lumps, become organized with blood vessels through it, and eventually formed large nodules, over which the skin might ulcerate. In addition it is questionable if these injections cannot predispose to local cancer, especially as Schamberg has shown that cancer is very common among paraffin workers. In many instances it has been necessary to remove the paraffin, but in my experience it is better not to operate until organization has taken place, for paraffin that has been in position for but a few weeks is very difficult to remove, inasmuch as it is in the form of a very fine thread that is much curled, not only upon itself, but also all of the neighboring structures.

CHAPTER X.

DISEASES DUE TO LOCAL BACTERIAL INFECTION.

Very many disease of the skin are frankly due to bacterial infection taking place from without, and it is probable that this list will grow, for many bacteria are not easy to cultivate, except under very special conditions, and it is certain that bacteriological studies with extended technique have as yet been applied to but comparatively few diseases of the skin.

The streptococci cause erysipelas, several forms of impetigo and eethyma. Streptococci vary much in their virulence, and the strains seem to be fairly constant in their virulence: for instance impetigo is not caught from erysipelas; although it is possible that the reverse may occasionally be true, yet certainly it is not common. In infections with streptococci, as with all other bacteria, the resistance of the host plays a great part, a part that we have no direct way of estimating.

ERYSIPELAS.

Synonym.—St. Anthony's fire.

Definition.—Erysipelas is a specific infection of the skin and subcutaneous tissue, caused by a streptococcus, and characterized by local and general signs of infection.

Occurrence.—Erysipelas is a common disease. Pollitzer's figures would seem to give it an incidence of about one-half of one per cent of all cutaneous disorders, about one case in two hundred. Fortunately it is no longer common in surgical wards, where it was once much dreaded.

Etiology.—Erysipelas is especially prevalent in the spring of the year. Osler states that "the susceptibility is specially marked in the cases of individuals with wounds or abrasions of any sort. Recently delivered women and persons who have been the subject of surgical operations are particularly prone to it. A wound, however, is not necessary." Alcoholism, chronic nephritis and general debility certainly predispose to it. One attack seems to render the patient more susceptible to another. The specific organism is the *Streptococcus erysipelatis*, which is probably identical with the *Streptococcus pyogenes*.

Symptomatology.—The incubation period is from three to seven days. The commonest location is on the face, usually on the bridge

of the nose and upon the cheeks. There first appears a flush, that is associated with fever and often with a rigor. The swelling and tension of the skin increase, and within twenty-four hours the external symptoms are well marked. The skin is smooth, œdematous and shiny. It is red or reddish-purple and there is a distinct elevation of surface temperature. The eruption usually spreads rather rapidly and the eyes are soon closed. When the eruption appears upon the scalp the characteristic red color is absent. The cervical lymph



Fig. 12.—Bullous erysipelas of the ear. The remainder of the face has been painted with iodine. (Gilchrist's case.)

glands are usually swollen, but may not be noticed because of the œdema of the neck. Vesicles may appear upon the ears, eyelids and forehead. Small cutaneous abscesses often occur about the cheeks and forehead. At times extensive bullæ may form.

In individuals of a lowered resistance the constitutional symptoms may, from the onset, be very grave, but as a general rule they are comparatively light, considering the high range of the temperature.

In the form known as erysipelas migrans or ambulans a new focus of infection appears close to the site of the original trouble, and about the time this clears up another focus lights up. The disease may run this kind of a course for several weeks, or even longer; the ordinary course is self-limited, recovery taking place in from five to ten days.

Pathology.—The inflammation is seated in the corium, chiefly around the lymphatics, and is of a serofibrinous nature. Very numerous cocci are present in the hypoderm, according to Unna. The general picture is that of a violent inflammation, and is not characteristic.

Complications.—Meningitis may occur, but is rare. Pneumonia is likewise unusual: septicæmia and ulcerative endocarditis are more common. True nephritis is occasionally seen.

Diagnosis.—The diagnosis is usually easy. Acute erythematous eczema may, at the onset, closely resemble erysipelas, but is not associated with any marked constitutional symptoms: in the course of a day or so it is noted that there is not so much swelling and œdema, that there is some scaling and that the itching is usually intense. In dermatitis venenata there is a similar lack of fever and general symptoms, and more marked vesication. In erysipeloid the character of the lesions is less severe, and is usually localized to one finger and the adjacent portion of the hand.

Prognosis.—In the debilitated and the alcoholic the prognosis must be guarded. Healthy adults usually recover: the general mortality in hospital practice is about seven per cent, and in private practice about four per cent. In the surgical wards the mortality is rather high.

Treatment.—In hospitals isolation should be strictly carried out. The general treatment consist in enforcing rest, a light diet, and plenty of liquids, and in keeping the bowels freely open. There is no evidence that any internal medication is of any value. Bacterins have been highly lauded, but the experience of Erdman¹ would indicate that they do not influence the course of the disease.

Likewise it is more than probable that no external application really has any influence upon the course of the disease, for it is deeply seated in the corium. The most common form of treatment is painting just ahead of the advancing lesion with the tincture of iodine. Compresses of cold water are probably just as effectual. Ichthyol is much used, but has practically nothing to justify it, for it is not as strongly antiseptic as iodine, and is much more disagreeable to employ.

¹ Erdman: Jour. Amer. Med. Assn., 1913, lxi, 2048.

IMPETIGO CONTAGIOSA.

Synonyms.—*Porrigo contagiosa*; *Impetigo parasitica*; *Impetigo vulgaris*; *Impetigo simplex*; *Impetigo streptogenes*.

Definition.—*Impetigo contagiosa* is a specific, acute, contagious disease caused by a streptococcus, and at first characterized by the formation of vesicles, later by crusts.

Occurrence.—*Impetigo* is one of the commonest dermatoses. Politzer has figured that it constitutes a little over five per cent of all skin afflictions.

Etiology.—The disease is contagious and also markedly auto-



Fig. 13.—A typical case of *Impetigo contagiosa* arising upon an eczematous skin.

inoculable. It occasionally occurs in epidemics. It is largely a disease of childhood, and is usually seen in the children of the poorer class. At times it is contracted in the barber shop, and hence is not infrequently seen on the face of men. The work of Sabouraud,² Gilchrist³ and others would indicate that this variety of disease is caused by the streptococcus, and that this organism can always be demonstrated in the primary vesicle, but that later staphylococcus infection may take place.

² Sabouraud: *Ann. de. Dermat. et. Syphil.*, 1900, 62, 320.

³ Gilchrist: *Trans. Amer. Dermat. Assn.*, 1899, 87.

Symptomatology.—Children are affected more frequently than are adults, although the latter are by no means exempt. The members of the poorer classes are more frequently attacked than are the well-to-do. The lesions are commoner upon the face than upon any other portion of the body, although they are frequently found in the scalp and upon the hands. The incubation period is uncertain but is probably very short. The primary lesion is a small vesicle, containing clear fluid, and having extremely thin walls. The size of the vesicle is rarely more than one centimeter, but in certain instances may be much greater. There is no inflammatory areola. There may be but one or two lesions, or there may be twenty or even more. As a general rule there is one primary vesicle, and then in a day or two several more make their appearance. In a short time the contents of



Fig. 14.—Bullous impetigo of the back of the hand. The vesicles are sometimes much larger than in this case.

the blister becomes milky or even frankly purulent. When a vesicle ruptures, as it usually does at an early date, or if it be broken, a red, moist surface is exposed, from which serum is excreted. Shortly after a yellowish or brownish crust forms on the surface, but the appearance is so superficial that the name "stuck-on crust" is usually given. When the cases come under observation it is much more common to find crusts than vesicles.

The lesions are apt to predominate around the chin and mouth, and at times occur upon the mucous membranes as reported by Montgomery.⁴

There are a number of anomalous types. In certain cases there are but two or three crusted lesions upon the face and one or two upon

⁴ Montgomery: Jour. Cutan. Dis., 1910, xxviii, 445.

the hands or fingers. In still other cases there may be a number of scattered lesions over the body. Occasionally the lesions are frankly bullous so as to resemble pemphigus, and then the disease is called impetigo bullosa. At times a ringed appearance is seen, impetigo circinata. When the lesions are frankly pustular from the start the staphylococcus is probably the exciting organism, the impetigo simplex of Duhring. In late years there has been a growing tendency to include the cases of pemphigus neonatorum as examples of true bullous impetigo, but the recently published work of Cole and Ruh⁵ shows that the exciting organisms in these cases are staphylococci and not streptococci.



Fig. 15.—Impetigo contagiosa in an adult, showing the tendency towards ring formation that is so often present in persons of that age. (Collection of Dr. Howard Fox.)

Pathology.—The vesicle formation occurs just beneath the horny layer, this layer constituting the roof. In the vesicle are found serum and polymorphonuclear leucocytes. The rete shows some slight œdema, and is invaded by leucocytes. The corium shows only mild inflammatory evidences.

Diagnosis.—In typical cases the diagnosis is easy. Vesicles and crusts scattered over the face, the lack of constitutional symptoms, and the extreme superficiality of the lesions are the chief factors in making the diagnosis. Pustular eczema often closely resembles impetigo: in fact at times the diagnosis can only be made by bacter-

⁵ Cole and Ruh: Jour. Amer. Med. Assn., 1914, lxiii, 1159.

iological examination, the eczema being due to the staphylococcus. Acute vesicular eczema, and dermatitis venenata, have more closely grouped lesions, and there are not the thick "stuck-on" crusts. In both of these diseases the subjective symptoms are much greater than in impetigo. In the frankly vesicular stage impetigo may resemble chicken-pox, but an examination of the body will speedily settle the diagnosis, for in varicella there are always many scattered lesions upon the trunk. In varicella there is usually some elevation of temperature. The diagnosis between bullous impetigo and pemphigus neonatorum can only be made with certainty by the means of cultures, the latter being caused by the staphylococcus. Likewise pemphigus

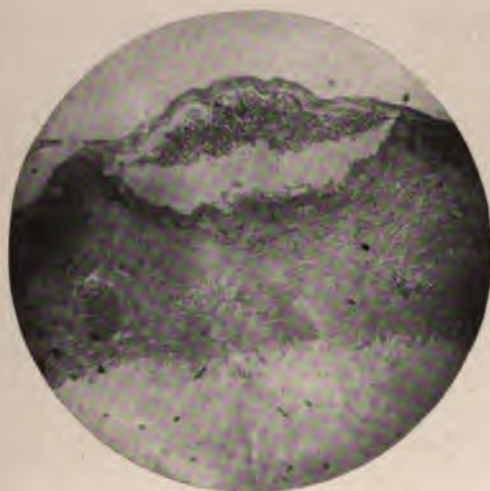


Fig. 16.—Low power photomicrograph of a vesicle of impetigo contagiosa. Note that the vesicle forms just beneath the horny layer, and that the inflammatory changes in the underlying corium are very mild.

may resemble bullous impetigo, but as a general rule the onset of this disease is not so sudden, and the course is much more severe, usually terminating in death. The streptococcus is only rarely found in the bullæ of pemphigus. In erythema multiforme of the bullous variety the lesions are usually symmetrical, and there is the history of recurring attacks. The typical crusting does not occur, and the streptococci do not occur. In drug rashes of a vesicular or bullous character the eruption is usually widespread, there are marked subjective symptoms and the bullæ do not contain streptococci.

Prognosis.—The prognosis is favorable: cases can nearly always be cured by the end of ten days.

Treatment.—The treatment in vogue at the Johns Hopkins Hos-

pital, and which I have always followed with success, is to anoint the lesions twice daily with the following prescription:

R Hydrar. ammon.	3 i	4.
Petrolat. q.s.	3 i	30.

In young children it is better to reduce the quantity of the ammoniated mercury to one-half a dram. It is always best to first remove the crusts, but this is not necessary, as one application of the ointment usually accomplishes this purpose. In case there is much itching, 5 or 10 drops of carbolic acid may be added.

Of course other antiseptics may be employed; salicylic acid or even sulphur will usually effect a cure.

The bullous lesions should first be opened and the ointment applied to the bases of the blisters.

Parents should always be warned of the contagious nature of the malady, in order that other children may be kept separated.

Occurrence in Negroes.—The disease is not as common in negroes as in whites. According to my statistics 78 cases were seen in 2,000 cases of skin disease in the white race and but 53 in an equal number of blacks. Also in negroes the cases are not so typical: in many instances no vesicles can be found, and the ailment more nearly resembles an impetiginous eczema. The scalp is much more apt to be involved in the colored than in the white; in nearly two-thirds of my cases such involvement had taken place, and there were many instances where the scalp only was affected. As a general rule there are but a few lesions on the face.

ECTHYMA.

Definition.—Ecthyma is an acute contagious disease of the skin, caused by a streptococcus, and characterized by superficial pustules, surrounded by a marked inflammatory areola.

Occurrence.—The disease is much rarer than impetigo. The records of the American Dermatological Association give its incidence as thirty-five hundredths of one per cent.

Etiology.—Ecthyma is much more commonly seen in dispensary than in private practice. It also occurs in those who are run down. The disease is both infectious and contagious, although only mildly so. It is more apt to be found in adults than in children. The exciting organism is the streptococcus.

Symptomatology.—The eruption is commonest upon the legs, but may also occur upon the shoulders, abdomen and upper arms. As a general rule the lesions vary in number from eight to a dozen, but

there may be either more or fewer. The primary lesion is an extremely superficial pustule, which may grow until about one centimeter in diameter. After the first day there is a marked inflammatory areola, and upon palpation there is a considerable area of surrounding induration. After five or six days the pustule usually ruptures and a fairly heavy dark brown crust forms, this crust being rather closely adherent. When removed a superficial ulceration can be seen beneath.

Pathology.—The disease is simply a deeper form of impetigo contagiosa. The inflammation begins in the deeper part of the epidermis, and only the upper part of the corium is involved.

Special Varieties.—Some cases of *dermatitis gangrenosa infantum* undoubtedly belong in this group, but will be discussed under the heading of that disease.

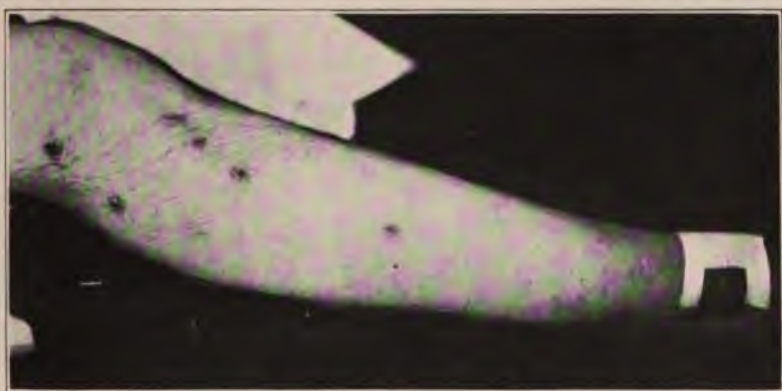


Fig. 17.—Ecthyma. Note the central superficial pustule, with the areola of inflammation. These lesions are often much larger than this one. (Collection of Dr. Richard L. Sutton.)

Diagnosis.—The disease can be distinguished from the impetigos by the marked areola, and the induration. At the same time there are certain border-line cases in which it is impossible to be sure with which disease we are dealing. Flat pustules of syphilis must also be differentiated. In the first place in syphilis there are often other indications of the infection, next the disease is more chronic, and lacks the marked inflammatory symptoms of impetigo, but the surest way of making the diagnosis is to remove the crusts and observe the character of the ulcerations beneath. In impetigo they are superficial and irregular; in syphilis deep and clean-cut, presenting a "punched out" appearance.

Treatment.—The lesions should be opened with a scarifier, and swabbed with pure carbolic acid or tincture of iodine. The full-

strength ammoniated mercury ointment should be applied. The general condition should be looked after, and cleanliness enforced.

STAPHYLOCOCCUS INFECTIONS.

Many diseases of the skin are undoubtedly due to infections with either the *Staphylococcus albus* or *aureus*, usually the former. Of course not all diseases in which these organisms are found are caused by them, for the staphylococci occur in greater or less numbers upon practically all normal skins.

FOLLICULAR IMPETIGO.

Synonym.—Impetigo of Boeckhart.

Definition.—A staphylococcus infection of the skin, characterized by very superficial pustules about the mouths of the hair follicles.

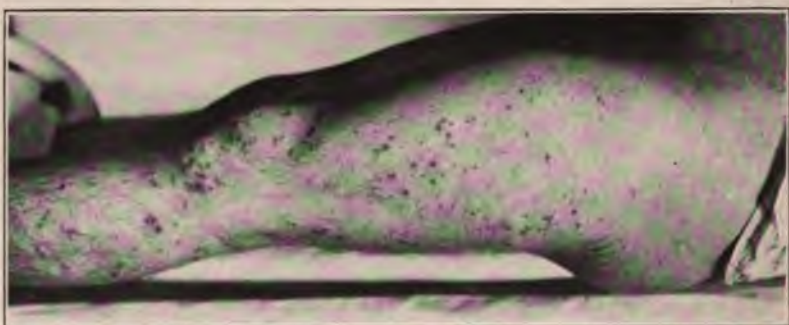


Fig. 18.—This photograph shows very clearly a typical case of follicular impetigo, due to infection with the staphylococcus.

Etiology.—Either the *Staphylococcus albus* or *aureus* is always found in the lesions: the *aureus* seems to be the most frequent. It occurs in all classes of people, even the extremely cleanly and healthful.

Symptomatology.—The disease is characterized by the presence of numerous superficial pustules around the mouths of the hair follicles. Either the hairs of the body or the scalp may be involved, but the disease is probably most common upon the legs. A modified form frequently occurs upon the face after shaving, especially when the shaving has been “too close” and has thus opened up the mouth of the follicle. The pustules vary in size from 2 millimeters to 5 millimeters, are very superficial, and contain a thick creamy pus. The hairs are usually not loosened. The course of the disease is essentially chronic.

Diagnosis.—These lesions may closely resemble true sycosis, but differ in being much more superficial and in not involving the root of the hair; in sycosis the hairs are always loosened.

Prognosis.—With painstaking treatment the prognosis is good. When the disease affects the scalp it is sometimes very difficult to eradicate, for while there may be no pustules for a long period they are prone to recur.

Treatment.—The ordinary form of treatment is an antiseptic ointment, but to my mind this is usually inefficient. A much quicker result is obtained if each individual lesion is cauterized with the tincture of iodine, pure carbolic acid or with a stick of real silver nitrate, not the usual lunar caustic. Bacterin treatment, preferably with an autogenous preparation, often gives extremely good results. As a general rule the initial dose is about 200,000,000, and the dose is increased about 20 per cent at each injection, the injections being given every six to eight days.

Occurrence in the Negro.—This infection is very prevalent upon the throats and cheeks of male negroes, usually resulting from shaving "against the grain." Shaving against the direction of the hairs usually results in clipping off the top of the follicle, and hence a splendid portal of entry for bacteria results. It can usually be remedied by abstaining from shaving for a few days, by the use of an antiseptic ointment such as ammoniated mercury, and by shaving in the direction of the hairs when that operation is resumed.

DERMATITIS EXFOLIATIVA NEONATORUM.

Synonyms.—Ritter's disease; Dermatitis exfoliativa infantum; Keratolysis neonatorum.

Definition.—Dermatitis exfoliativa neonatorum is an acute infectious disease, probably caused by the *Staphylococcus albus*, and first characterized by the formation of vesicles and bullæ, and then by the more or less general exfoliation of the superficial layer of the skin.

Occurrence.—The disease is a very rare one. Out of 7,000 cases I have seen but two examples of this trouble.

Etiology.—Most of Ritter's⁶ cases occurred in institutions, and under circumstances that seemed to show that it was either infectious or contagious. The work of both Hedinger⁷ and myself⁸ would seem to show that the *Staphylococcus albus* is the exciting organism.

⁶ Ritter: Arch. f. Dermat. u. Syphil., 1879, 129.

⁷ Hedinger: Arch. f. Dermat. u. Syphil., 1906, lxxx, 349.

⁸ Hazen: Jour. Cutan. Dis., 1912, xxix, 325.

As Hedinger suggests, this dermatosis is closely related to acute pemphigus neonatorum: in fact there is probably no dividing line, inasmuch as both diseases are caused by staphylococci.

Symptomatology.—The disease begins in children between the ages of two and six weeks. It is always localized at the start: the first appearance often being on the chin or around the mouth. The primary lesion is nearly always a vesicle, which is usually flaccid and which speedily ruptures with the formation of a more or less thick yellow scab. The superficial vesicles spread very rapidly in one of two ways. Often there are discrete scattered vesicles or bullæ, which rupture at an early date, their roofs forming exfoliating masses. Or the horny layer may be undermined and peel off under pressure just as in pemphigus foliaceus, except over very much wider areas. After the separation of the superficial epidermis the underlying skin has a sodden appearance and is bright red in color. The exfoliation is



Fig. 19.—Dermatitis exfoliativa neonatorum. Notice the closely grouped vesicles upon the body. This child recovered.

usually most marked in the axillæ and groins, but may cover the entire body. Mucous membranes may show invasion. Usually there is a very marked sodden odor, similar to that in pemphigus foliaceus. There may be abscess formation in connection with this trouble. Usually there is no fever, and the general condition of the child is at first fairly good, but later the temperature may fall and marantic symptoms supervene.

Pathology.—Skinner⁹ has written an excellent account of the pathology of this malady. He finds that the vesicle formation takes place directly beneath the horny layer. A very thick layer of cocci are found just above the stratum granulosum. In the rete and corium there are evidences of an acute inflammatory process.

Diagnosis.—The disease must be differentiated from pemphigus neonatorum, pemphigus foliaceus and bullous impetigo. For all prac-

⁹ Skinner: Brit. Jour. Dermat., 1910, xxii, 75.

tical purposes a differentiation from the first named is superfluous, for both are evidences of a similar infection. Pemphigus foliaceus does not attack such young children, is not usually conceded to be of a staphylococcal nature, and always ends fatally. Impetigo is more frankly bullous and is caused by streptococci. Congenital syphilis should not be confused, as the symptoms are less inflammatory.

Prognosis.—The prognosis must be guarded as about one-half of the children die.

Treatment.—The general condition of the child demands attention, special emphasis being laid upon maintaining bodily heat. Proper nourishment must also be given. Both of my cases recovered without any attention being given to the skin except cleansing it with oil. The employing of any antiseptic would be very dangerous, owing to the extent of the eruption.

PEMPHIGUS NEONATORUM.

Synonyms.—Pemphigus acutus neonatorum; Pemphigus neonatorum contagiosus; Pemphigus epidemicus; Pemphigus contagiosus; Pemphigoid of the new-born.

Definition.—Pemphigus neonatorum is an acute contagious disease of the new-born, characterized by the formation of bullæ, and caused by staphylococci.

Occurrence.—The disease is rare, but epidemics may occur in maternity hospitals.

Etiology.—The disease is contagious and is caused by staphylococci, usually the aureus according to Cole and Ruh.¹⁰

Symptomatology.—Newly-born children are affected. The first evidences of the disease consists in the persistent formation of vesicles upon a limited cutaneous area, often upon the face. They keep increasing in size and number, usually rupturing at an early date. The entire skin may be affected, and there is usually considerable desquamation, just as in dermatitis exfoliativa neonatorum.

Pathology.—The pathology is practically identical with that of the disease just described.

Diagnosis.—As already indicated dermatitis exfoliativa neonatorum is undoubtedly the same disease, although possibly a more severe degree of it. Bullous impetigo is due to streptococci and must be sharply differentiated. In congenital syphilis the lesions usually develop more slowly, the bullæ tend to be larger, and to be isolated.

Prognosis.—The trouble is a serious one: in different epidemics the mortality varies from ten to fifty per cent.

¹⁰ Cole and Ruh: Jour. Amer. Med. Assn., 1914, lxiii, 1159.

Treatment.—The treatment is the same as for dermatitis exfoliativa neonatorum. Cole and Ruh recommend autogenous bacterins very strongly. The initial dose should be about 5,000,000 organisms.

SYCOSIS VULGARIS.

Synonyms.—Sycosis non-parasitica; Folliculitis barbæ; Barber's itch; Sycosis coccogenica.

Definition.—A chronic inflammatory infection of the hair follicles



Fig. 20.—This photograph illustrates a man who had a mild but very stubborn case of sycosis vulgaris.

of the bearded areas, due to infection with the *Staphylococcus aureus*.

Occurrence.—The disease is fairly common: it constitutes about one-half of one per cent of all dermatoses.

Etiology.—The disease is undoubtedly mildly contagious, and at times is acquired in the barber shop. Shaving undoubtedly plays a part by opening up the top of the hair follicles and thus giving a portal of entry. Gilchrist¹¹ has shown that the *Staphylococcus aureus* is the exciting agent, and his observations have been abundantly con-

¹¹ Gilchrist: Trans. Amer. Dermat. Assn., 1899, 87.

firmed. It is possible that in a few instances other bacteria may be the cause. As predisposing factors may be considered any agents which damage the skin, such as shaving, wearing rough collars, and exposure of the face to moist heat or severe weather.

Symptomatology.—The disease affects men only, inasmuch as the bearded area alone is involved. The first symptom noticed is the presence of a number of conical reddish papules, always pierced by a hair. There is usually some smarting and burning. In certain acute cases there may be considerable erythema between the papules, but this is unusual. These papules shortly become pustular. The disease at first is limited in extent, but gradually spreads until a considerable area of the face may be involved. Not every hair follicle is affected, usually only about one out of every ten or twenty. The lesions are discrete, except in very severe cases. The papules are usually rather small, rarely being more than 5 mm. in diameter. At times there is considerable crusting, especially in the chronic cases. The pustules show but little tendency to rupture. The hair becomes lustreless; after a short time the hairs in the affected follicles become loose and may be readily extracted. Occasionally the hair follicles are destroyed, but this is unusual, and permanent loss of hair is the exception. The disease runs a chronic course, and does not tend to heal of itself. Its course is irregular. At times it may be much better, and then without any apparent cause there will come a marked relapse.

Special Forms.—*Lupoid sycosis* or *ulerythema sycosiforme* is a very severe type, first characterized by a simple redness of the skin, soon followed by the appearance of vesico-pustules at the mouths of the hair follicles. There is considerable crusting, so that the disease simulates an eczema. As this disease progresses it can be noted that the hair follicles have been destroyed, and that actual scar tissue is left behind. The edges of these patches spread either peripherally or serpiginously. This form is exceedingly chronic, and lasts for many years.

Pathology.—The initial lesion is always a pustule situated at the mouth of the follicle, and surrounding the hair shaft. The top of the pustule is formed by the horny layer, and the sides by the rete. There is considerable œdema in the neighboring tissues, and a marked infiltration with polymorphonuclear leucocytes. Actual abscess formation takes place, with the destruction of the surrounding tissues. The œdema occasioned by the inflammation tends to distend the follicle so that infection can travel deep down into it, but this is not always true. If the abscess be of sufficient size to surround the follicle it destroys the latter.

Diagnosis.—Follicular impetigo may closely resemble true sycosis, but is more apt to occur upon the neck, while sycosis affects the chin and cheeks. The lesions of sycosis are deeper, and are accompanied by more induration than are the lesions of impetigo. Ringworm of the beard begins as a small scaly spot, a superficial ringworm; it usually affects the chin and submaxillary region. The involvement is deep, being located at the bottom of the follicles, and is characterized by large deep nodules and tubercles. The characteristic organism can always be found in the hairs extracted from the



Fig. 21.—A severe case of sycosis vulgaris. (After Ohmann-Dumesnil.)

infected follicles. Occasionally it is impossible to tell the difference between true eczema and sycosis, but usually in eczema there is more crusting and more itching, while the disease is not confined to the bearded areas of the face; it also tends to spread much more rapidly than does sycosis. Acne is always accompanied by blackheads, and is not confined to bearded portions of the face.

Prognosis.—The disease is essentially chronic. If not treated it has no tendency towards spontaneous recovery, and even when carefully treated it may persist for years, a marked relapse often occurring over night. The disease is not dangerous to life, and can nearly always be cured.

Treatment.—The general health of the patient must always be looked after, and every effort made to improve the general health with the idea of building up resistance. Exercise, food, fresh air, sleep, work, exposure to irritants must all be carefully looked into. Calcium sulphide in about one-fourth of a grain doses three times a day has been advised, but is of doubtful value. In certain instances treatment with an autogenous bacterin has done much good. The initial dose, if the organism be the aureus, should be at least 200,000,000. Stock bacterins are usually disappointing, but may occasionally be of some value.

Local treatment is of far greater importance than is general treatment. In all cases antiseptic preparations must be used. Probably the best of these is an ointment consisting of one dram of ammoniated mercury to sufficient base to make an ounce. An ointment in which thirty grains of salicylic acid is substituted for that amount of ammoniated mercury is also excellent, and is undoubtedly better if there be much crusting. Calomel is not widely used for this trouble, but should be given a trial, as it is one of our best antiseptics. Tincture of iodine may also be of much use. In the old chronic cases some form of tar should be used.

Shaving should not be indulged in as it opens up other follicles and tends to spread the infection. A pair of fine clippers should be substituted for the razor. The hairs in the affected follicles should always be gently extracted: this is probably the most valuable single procedure that we have at our disposal. But hairs in adjacent healthy follicles should not be extracted: to do so may spread the disease, and may also cause a very violent inflammatory reaction of the skin itself.

The X-rays sometimes give brilliant results. An erythema dose (3 Holz knecht units), measured by Sabouraud's pastilles and a radiometer should always be employed. The object of this treatment is to cause the temporary falling of the hair.

FURUNCLE.

Synonyms.—Boil; Furunculus.

Definition.—A furuncle is an acute abscess of the skin, usually caused by the *Staphylococcus aureus*, beginning around a hair follicle.

Occurrence.—Furuncles are extremely common. According to Pollitzer they constitute 1.8 per cent of all dermatoses, and when it is considered that most of these cases consult the surgeon rather than the dermatologist, it will be readily seen that they are even commoner than is here indicated.

Etiology.—Three factors are to be considered. First is the resistance of the patient. It is well known that the debilitated are more apt to have abscesses than are the healthy. Diabetes is a special predisposing factor. Marantic children are also very liable to have furunculosis. The second factor is that of chronic irritation. Boils are most common where the skin is subjected to friction, as upon the back of the neck where the collar rubs. Friction works in two ways, first by removing the horny layer of the skin and increasing the portals of entry, and second by mechanically rubbing in bacteria. Third, the specific cause of a boil is an infection with the staphylococcus, either the albus or the aureus.

Symptomatology.—A boil begins in one of two ways. The rare way is for the first sign to be a superficial pustule, usually pierced by a hair, which gradually becomes more indurated and swollen, until finally a true furuncle develops. The more common way is for an area of deep induration and tenderness to first manifest itself, and to soon become definitely localized, and to approach the surface, so that in the course of two days there is a definite red, painful, hot mass protruding beyond the level of the skin. By the fifth day fluctuation can definitely be felt and the overlying skin is distinctly thinner, and often a central point of suppuration can be seen. If left alone the skin ruptures about the end of a week, and a considerable quantity of pus is discharged. A few days later a "core" of necrotic tissue is evacuated and resolution begins. The scar formation is usually slight.

Exceptionally the abscess runs a much more chronic course and the boil may not point for two or three weeks, or resolution may take place spontaneously, the so-called "blind boil."

There is always a tendency for neighboring follicles to become infected from the discharges, and unless great care is taken there may be a crop of furuncles in the immediate neighborhood of the first.

Pathology.—The starting point is a hair follicle, sebaceous gland, or possibly a sweat gland or duct. At first there is a small area of pus formation that soon widens, the neighboring tissue being destroyed. This mass of destroyed tissue forms the "core." A boil is always walled in by a prophylactic membrane consisting of polymorphonuclear leucocytes, small round cells and fixed tissue cells: this being an attempt upon the part of the body to limit the spread of the infection.

Diagnosis.—Boils may be simulated by gummata. Usually, however, there is rather less inflammation in a beginning gumma and also much less pain. Other signs of syphilis can usually be elicited. Upon the legs the lesions of erythema nodosum may cause some

trouble; however, in erythema nodosum there are usually multiple, symmetrical lesions making their appearance at the same time. This disease is often accompanied by rheumatoid pains. These lesions do not go on to suppuration, except in rare instances.

Prognosis.—Except in the marantic, or diabetic, boils are a painful but not a serious malady. With care there should not be a crop.

Treatment.—Any underlying factors must have careful consideration. The bowels should always be kept open, and plenty of water should be drunk. The internal use of calcium sulphide is of doubtful value, although it is often recommended. Bacterins are of no value in treating a single boil, which is a distinctly self-limited affection, but may be of much value in furunculosis, where one after another keeps making its appearance. Autogenous bacterins are usually considered to be preferable to stock preparations. The abortive treatment of boils, that is, the use of injections of various antiseptics at an early stage, has never met with popular favor, and is almost universally regarded as valueless. Boils are frequently poulticed with some hot, moist substance, with the idea of relieving pain and of “bringing them to a head” sooner, but poulticing is accompanied by the grave risk of macerating the surrounding skin, and of rendering infection in the neighboring follicles extremely probable.

Boils should be incised with a free incision at as early a date as is possible. Even if further suppuration is not prevented the patient is rendered much more comfortable. This little operation can be done under local anæsthesia, preferably with Schleich’s solution. A free incision is to be preferred as this gives better drainage and avoids the necessity of a second operation. In the case of small boils the cavity can be swabbed with pure carbolic acid or the tincture of iodine, and further trouble thus averted, but this is not so successful in the case of large boils, probably because the mass of slough prevents the iodine from coming in contact with the entire cavity. A boil should never be curetted, as this procedure breaks down the wall of enveloping leucocytes and fibrin and usually spreads the infection. A boil, after being opened, should always be drained. A small piece of rubber makes an excellent drainage tube, for gauze will become choked up by fibrin, unless first treated with calcium oxalate. An antiseptic ointment should always be rubbed over the surrounding skin so as to prevent the infection of neighboring follicles.

Occurrence in Negroes.—Furuncles and boils are much less prevalent in the negro race, even in mulattoes, than in whites. This applies to practically all of the acute infections of the skin. The cause has not as yet been determined, but may be due to the fact that the greasier skin does not give as good a culture medium as the drier

skin of the whites. Large boils or carbuncles are rare, even in a large surgical service, although they are by no means wanting.

CARBUNCLE.

Synonyms.—Carbunculus; Anthrax simplex; Anthrax benigna.

Definition.—A carbuncle is an acute, phlegmonous inflammation of the cutis, terminating in a slough, and having several points of exit.

Occurrence.—According to Pollitzer they constitute about two-tenths of one per cent of all cutaneous troubles, but are probably somewhat commoner inasmuch as they are usually seen by surgeons and not by dermatologists. The mistake of calling by the name carbuncle any ordinary boil is frequently made.

Etiology.—Just as in the case of boils there are three factors to be considered. Undoubtedly, however, the general resistance of the individual is even more important here than in the case of a simple boil. Diabetes seems to be a marked predisposing cause. The staphylococci are the infecting organisms.

Symptomatology.—The first indications of the formation of a carbuncle are very similar to those accompanying a boil, but there is apt to be more constitutional disturbance, such as chilliness, fever and headache. The induration usually becomes pronounced very shortly, and is much wider than in a case of a boil, and is not so definitely circumscribed. The overlying skin eventually becomes softened in several places instead of at one. At times the whole area becomes necrotic and sloughs, but in some cases some healthy tissue seems to remain between the different foci. There is always considerable pain, and there may be very grave constitutional disturbance, sometimes due to absorption of toxins, and sometimes to a generalized infection.

Pathology.—The pathology is similar to that of a boil, except that there are multiple foci of suppuration, that usually fuse into one large abscess.

Diagnosis.—A carbuncle differs from a boil in its larger size, in its flatness, and in its multiple openings.

Prognosis.—The prognosis must always be guarded, especially when the head or neck is involved. In the majority of cases, however, full recovery takes place.

Treatment.—The general health must be supported as indications may point out. An autogenous bacterin may be worth trying. The case should always be treated by a competent surgeon. Some

surgeons advocate the complete excision of a carbuncle, others believe that there should be free incision with abundant drainage.

DIFFUSE PHLEGMON.

Synonyms.—Phlegmona diffusa; Phlegmonous cellulitis.

Definition.—An acute infection of the subcutaneous tissue, of a diffuse character, and due to pyogenic organisms.

Occurrence.—According to Pollitzer these cases constitute thirteen-hundredths of one per cent of all skin cases.

Etiology.—Either the staphylococcus or streptococcus may be the direct infecting agent. The resistance of the patient must count for much.

Symptomatology.—The first symptoms are often those of a general infection, malaise, fever and headache. There is pain at the site of involvement, and very shortly thereafter an ill-defined inflammatory swelling. There is much œdema and swelling, which may subside without pus formation, or pus may form at an early date. The infection may burrow along the fascia, or may come to the surface speedily. The disease varies much from very mild forms to those that are rapidly fatal. For a further discussion the text books upon surgery should be consulted.

Prognosis.—In the severe cases the prognosis must be guarded, as there have been many fatal cases.

Treatment.—Free incision by a competent surgeon is the best treatment.

DERMATITIS REPENS.

Synonym.—Acrodermatitis perstans.

Definition.—Dermatitis repens is a spreading infection, starting from an injury, and characterized by a serous undermining of the epidermis.

Occurrence.—The well-developed disease is very rare, although slight forms of it are not as uncommon as has been generally supposed.

Etiology.—There is no reason to suppose that the disease is anything else than an infection. Sutton¹² concludes that either the *Staphylococcus albus* or *aureus*, probably a peculiar strain, is responsible, and from personal observations upon two cases I am inclined to agree with him.

Symptomatology.—The disease either follows an injury, or may

¹² Sutton: Jour. Cutan. Dis., 1911, xxix, 325.

commence as a blister. It is marked by redness and some exudation, and the surface layers of the epidermis shortly separate, there being serum beneath them and sometimes distinct vesicle formation along the edge of the lesion. This trouble usually starts in upon a finger, but may commence upon the foot, and usually spreads slowly and gradually up in the direction of the body, the line of demarcation being very sharply defined. A sero-purulent fluid can be obtained from the vesicles and from beneath the epidermis at the growing edge of the lesion. As the disease spreads the older parts of the lesion become dry and heals, looking red and thin. The infection may spread up the shoulder and involve a considerable portion of the trunk, but as a rule is confined to within a few inches of its starting place.

Pathology.—The separation takes place in the rete, the upper portion of which, along with the horny layer, forms the roof of the slough. The corium and rete show marked inflammatory signs.

Diagnosis.—The disease is characterized by its spreading edge and the undermining of the epidermis.

Prognosis.—The ultimate prognosis is good, but the disease is often excessively stubborn. Vigorous antiseptic treatment should give better results than have been obtained in the past.

Treatment.—The undermined skin should be carefully and thoroughly cleared away, and all vesicles thoroughly opened. A simple antiseptic ointment may first be used, but this usually does not work well, and then one should paint the whole infected surface, and slightly beyond its spreading edge with tincture of iodine, or else swab it with pure carbolic acid. In very severe cases the actual cautery should be employed.

GRANULOMA PYOGENICUM.

Synonym.—Human botryomycosis.

Definition.—A tumor composed of granulation tissue, and caused by pyogenic organisms.

Occurrence.—This disorder is rather rare: it probably constitutes about one case in each thousand seen in dermatological practice.

Etiology.—The causative organism is not a fungous, but a staphylococcus, probably always the aureus.

Symptomatology.—From the site of some slight dermatitis, either traumatic or infectious, there arises a slight overgrowth of granulation tissue, this soon protrudes from the wound to a greater or less extent, usually not above one-half inch. The new growth is covered by thin epidermis, but is intensely red, and exactly resembles granu-

lation tissue over which there is a very thin layer of epithelium. The growth may be slightly pedunculated.

Pathology.—The whole subject has been carefully reviewed by Wile,¹³ whose account is probably the best extant in the English language. The epidermis covering the new growth is thin, and there is no wavy line between it and the underlying tissue. The main body of the tumor consists entirely of perfectly typical granulation tissue, which contains many cocci.

Diagnosis.—This harmless growth is frequently misdiagnosed, and is called sarcoma, cancer and nearly every other variety of tumor. However, its lack of induration at the base, its softness, the history of springing from an acute lesion, and its similarity to granulation tissue should give the correct diagnosis. When once seen it will never be forgotten.

Prognosis.—The prognosis is absolutely good, provided that the growth be completely removed.

Treatment.—The growth may be excised with a slight margin of healthy tissue at the base, and the wound closed by sutures, or the growth may be curetted away, and the base thoroughly cauterized. Cauterization alone will usually not suffice.

DERMATITIS VEGETANS.

Synonyms.—Pyodermatitis vegetans: Verrucose dermatitis.

Definition.—A chronic inflammatory condition of the skin, usually caused by staphylococci, and characterized by the presence of vegetating plaques. There are many forms, the mildest being slight papillary hypertrophy.

Occurrence.—Severe examples of this affection are rare, but the form in which there is simply a verrucose condition is rather common.

Etiology.—In practically all cases the skin which subsequently became hypertrophied had at some time been subject to more or less continuous irritating discharges. Various observers have stated that either the *Staphylococcus albus* or *aureus* is probably directly responsible.

Symptomatology.—In the mild cases, as described by me,¹⁴ a portion of the skin is thickly studded with small papillary outgrowths, which vary in diameter from two millimeters to five or six millimeters. They are elevated from two millimeters to one centimeter above the cutaneous level. In one of my cases keratinization of the papillæ

¹³ Wile: *Jour. Cutan. Dis.*, 1910, xxviii, 663.

¹⁴ Hazen: *South. Med. Jour.*, 1914, vii, 710.

had taken place (Fig. 22). In the cases described by Hartzell,¹⁵ Wende¹⁶ and others there are large vegetating plaques, which usually arise upon the site of a moist eczema. In this group of cases there may be a large or a small area covered, and the exuberant tissue may



Fig. 22.—Vegetating dermatitis.

protrude well over one centimeter beyond the normal cutaneous surface. Pus and serum usually exude, and there may be considerable itching.

¹⁵ Hartzell: Jour. Cutan. Dis., 1901, xix, 465.

¹⁶ Wende and DeGroat: Jour. Cutan. Dis., 1911, xxix, 743.

Pathology.—There is usually a marked hyperplasia of the epithelium, although this may be lacking entirely. The general picture is that of a chronic inflammation: the blood vessels are much dilated, and there is œdema and infiltration of the corium, the cells present being small round cells, spindle cells, a few plasma cells and eosinophiles, and very few polymorphonuclears or mastcells. The sebaceous and sweat glands seem to be reduced in number.

Diagnosis.—Several conditions must be differentiated. Malignancy should cause no trouble, for in the benign condition the hard edge so characteristic of cancer is lacking. Tuberculosis verrucosa cutis is differentiated with difficulty, and usually only by the history, by laboratory tests, or by the therapeutic test, antiseptic ointments sometimes having a beneficial result in the non-tuberculous condition. Blastomycosis may closely resemble this affection, and the diagnosis made only by finding the causative organism. Bromide eruptions, as pointed out by Gaskill,¹⁷ might confuse, but the history should settle the diagnosis. In pemphigus vegetans the mucous membranes are first affected, and then the flexures of the body. This malady starts in with vesicular lesions

Prognosis.—There is very little tendency for spontaneous healing to take place. Stelwagon states that cleanliness and antiseptic ointments will cure the condition, but this has not been my experience, although I have tried it upon at least six cases.

Treatment.—As already stated, I have not been successful with simple measures, nor has the X-ray proven helpful, although with better technique it might be a great aid. Surgical treatment is undoubtedly the quickest way of curing the trouble, and should be tried, unless the lesion is upon an exposed part, and then ointments should be given a very thorough trial. It is usually necessary to employ general anæsthesia, then curette away the granulations, and cauterize with the actual cautery, or else dry the wound, check the bleeding with the cautery or adrenaline, and then apply acid nitrate of mercury for ten minutes, neutralizing with an excess of sodium bicarbonate.

PARONYCHIA.

Definition.—Paronychia is an infection of the tissues immediately surrounding the nail substance.

Occurrence.—Paronychia constitutes about one-fifth of one per cent of all skin diseases.

Etiology.—Paronychia may be due to syphilis. More commonly it is due to a simple infection, usually with the staphylococcus. As

¹⁷ Gaskill: Jour. Amer. Med. Assn., 1914, lxii, 912.

predisposing factors may be mentioned eczema of the fingers and any occupation that macerates the skin. It is especially common in those who do much washing.

Symptomatology.—The commonest site is in the tissue just over the base of the nail, but the tissue at the sides may be involved as well. It frequently accompanies ingrowing toe-nail. The course may be either acute or chronic, more commonly the latter. The tissue is red and swollen and is either tender or slightly painful. Usually there is but little pus formation. The nutrition of the nail often suffers.

Treatment.—Antiseptic ointments should be applied. An incision down the mid-line of the finger, reaching to the nail, will often cure the trouble. Autogenous bacterin should be of benefit in the chronic cases. All irritation of the hands must be avoided. In the syphilitic cases mercury or salvarsan should be employed.

COMEDO.

Synonym.—Blackhead.

Definition.—Comedo is a chronic affection of the sebaceous glands, characterized by the filling of them with a plug of inspissated sebaceous matter.

Occurrence.—The disease is usually seen in connection with acne vulgaris, but may occur independently, although dermatologists are not often consulted concerning it. It is not uncommon in old men, or in young boys.

Etiology.—The disease usually develops about the time of puberty, probably due to the increased activity of the sebaceous glands at this time. Disorders of digestion also seem to predispose, in fact any factors that affect the general health may be considered as predisposing to this abnormality. Unna, Gilchrist and others look upon the acne bacillus as the specific cause.

Symptomatology.—Comedones are usually seen upon the face alone, but may also occur upon the back. They are usually seen in the greatest number on the nose, in the naso-labial folds, on the forehead and temples, and around the mouth. From the surface they appear as white, grey or black dots upon the skin, usually being situated at the center of a very indistinct whitish swelling. They vary in size, even being as large as 5 mm. in diameter. They are usually discrete, but may become confluent, and then form the so-called double comedones of Dumesnil.¹⁸ In this instance there are two points upon the surface, but the comedone itself is single. In some instances this variety may give rise to considerable scarring.

¹⁸ Ohmann-Dumesnil: Jour. Cutan. Dis., 1886, 33, 103.

The grouped comedones of children ¹⁹ form a special but rare variety. They usually occur upon the cheek that presses against the mother while nursing. In certain instances necrosis may result. Young children may also show similar groups, usually upon the forehead where the hat-band rubs.

Pathology.—The follicle is filled with inspissated sebaceous matter that reaches just to the surface. The walls of the follicle are somewhat thinned by pressure. The black color is due, according to Unna,²⁰ to a pigment (ultramarine) derived from the secretions and not from dirt.

Diagnosis.—The diagnosis is perfectly simple: in case of doubt the expulsion of the blackhead by squeezing will settle the question.

Prognosis.—The prognosis is good, for with prolonged treatment the tendency for blackhead formation can usually be done away with.

Treatment.—The same treatment that is employed for acne is the best.

ACNE VULGARIS.

Synonyms.—Acne; Acne disseminata; Acne simplex.

Definition.—Acne is a chronic inflammatory disease of the sebaceous glands, characterized by blackheads, papules and pustules.

Occurrence.—Acne is one of the commonest diseases for which the dermatologist is consulted. It constitutes 8.4 per cent of all skin affections. Only eczema and syphilis are more frequently seen.

Etiology.—The causes for acne are both predisposing and specific. The most marked predisposing cause is a greasy skin, a condition that usually begins about the time of puberty, due to the increased activity of the sebaceous glands at that period of life. Any conditions or ailments that lower bodily resistance count for much in the development of acne. Especially do indigestion and constipation tend to make trouble much worse, even if they do not directly cause it. Chlorosis and menstrual disturbances are also credited with being underlying factors. The excellent work of Gilchrist,²¹ Unna,²² Lovejoy and Hastings,²³ Haase,²⁴ Engman,²⁵ Fleming,²⁶ and others seems to have definitely established the acne bacillus (Fig. 23) as the cause

¹⁹ Harries: Brit. Jour. Dermat., 1911, xxiii, 5.

²⁰ Unna: Virchow's Arch., 1880, lxxii, 175.

²¹ Gilchrist: Trans. Amer. Dermat. Assn., 1899, 87; Jour. Cutan. Dis., 1903, xxiv, 107.

²² Unna: Histopathology of Diseases of the Skin.

²³ Lovejoy and Hastings: Jour. Cutan. Dis., 1911, xxix, 80.

²⁴ Haase: Jour. Amer. Med. Assn., 1912, lvix, 504; Jour. Cutan. Dis., 1913, xxxi, 1013.

²⁵ Engman: Jour. Cutan. Dis., 1910, xxviii, 553.

²⁶ Fleming: Lancet, April 10, 1909, 1035.

of the papule, and of certain of the pustules, while in the majority of the cases the pustulation is due to secondary infection with the *Staphylococcus albus*.



Fig. 23.—Acne bacilli. (Collection of Dr. Gilchrist.)

Symptomatology.—The face is the most common site for the disease. The portions of the face most involved are the forehead and temples, the maxillary portions of the cheeks and the chin, but in severe cases no part is exempt. The shoulders and back are frequently affected, as is also the upper part of the chest and the deltoid region of the arms. In exceptional instances the lesions may be found as far down the arms as the elbow, and in a recent case I met them on the wrists.

Men and women are about equally affected, but women are more apt to consult a physician. The disease usually comes on about puberty, and usually heals spontaneously by the time the individual is twenty-four or twenty-five years of age. In the case of men with deeply-seated lesions upon the back the duration of the trouble may be indefinite.

There are all grades of acne: in some instances the trouble is almost invisible, there being but a few comedones and an occasional papule, worse at the time of menstruation or after an attack of constipation



Fig. 24.—A case of comparatively mild acne vulgaris, showing blackheads, papules, pustules, and some fine scars.

or indigestion. In other instances there may be large deep pustules that are noticeable from a considerable distance, and that leave marked scarring.

The primary lesion is invariably a comedone: this may be of large size or almost microscopic. The next stage of development is a semi-globular or more rarely almost acuminate papule surrounding the blackhead. This papule is rarely over 5 mm. in diameter, and is usually intensely red. It may be deep-seated or very superficial. If deep-seated, it may be of considerable size, sometimes a centimeter, and is usually very painful upon pressure. Pus usually forms in from twenty-four to forty-eight hours, but may not come to the surface for a week or more. The pustules may be superficial or deep-seated. They usually point but more rarely burrow in the corium, sometimes forming abscess cavities of considerable size. They may develop rap-

idly or they may be sluggish. They usually contain thick white pus, but in the deeply-seated ones the pus may be semi-fluid, fluid or distinctly blood stained. The pustules usually rupture spontaneously, but there is rarely any crusting present.

In about one case out of ten, especially in those instances where there are deep lesions, considerable scarring may result. This scarring may be serious, especially in the case of women.

At times the individual will refuse to go into society because of the disfigurement. In still other instances there seems to be sufficient absorption to cause constitutional symptoms. I recall one patient whose periodical attacks of migraine did not cease until the acne was cured.

Special Varieties.—*Acute acne vulgaris* is but little mentioned in the text books, but does occur. In these instances there have undoubtedly been pre-existing blackheads, and it is the formation of papules and pustules that causes the individual to imagine that the trouble is new. I have seen a number of instances where the latter developed practically over night. This variety of the disease is usually very amenable to proper treatment, the removal of the blackheads and a sulphur ointment generally affecting a cure in a short time.

Acne punctata is the mild type in which there are comedones and a few small papules present. In certain instances the lesions may be macular rather than papular. This is especially true of young girls, in whom the comedones are very small in size.

Acne papulosa is the type in which there are papules, but few pustules.

Acne pustulosa is the variety in which there are superficial pustules, and is the commonest type.

Acne indurata is distinguished by its deep-seated pustules, that may slowly come to the surface and discharge, and then either resolve or fill up again with pus.

Acne atrophica is characterized by the formation of small pit-like scars that remain after the papular or pustular lesions have absorbed.

In *acne hypertrophica* there is a too exuberant formation of scar tissue, so that a condition analogous to keloids remains. This is very rare, even in the negro.

Acne cachectiforme is usually observed in depraved conditions of the bodily economy, and there are numerous deep sluggish abscesses, which show but little tendency to come to the surface.

Acne artificialis is produced by the ingestion of iodides or bromides, or by the external use of tar. They may simulate an ordinary acne very closely.

Pathology.—The primary condition is the blocking of the hair follicle, which of course means the sebaceous duct, by a comedone or by horny material. Infection then takes place in the sebaceous gland and usually in the follicle as well, and this infection is usually due to the action of the acne bacillus. The inflammation begins either in or around the gland, and all of the characteristics of a true inflammatory process are present. If suppuration takes place there is a cen-



Fig. 25.—Acne indurata, showing large indolent pustules and deep scarring.

tral abscess cavity with surrounding necrosis. In the chronic cases giant cells are often found surrounding the partially necrotic central mass of tissue.

Diagnosis.—The diagnosis of acne is easy, even students new in the dispensary rarely make a mistake in reference to this disease. The chronicity of the infection, the areas involved and the presence of blackheads make an absolutely characteristic picture. Pustular syphilis has a more general distribution, and is accompanied by other evidences of the infection. Rosacea is occasionally mistaken, but this disease usually comes on after thirty years of age, and there is always

considerable hyperæmia. Acne from bromides or iodides is the most apt to be confused.

Prognosis.—*Acne vulgaris* is essentially a chronic affection, and is often very rebellious to treatment, yet in private practice it is usually possible to get good results. It is rare to affect a cure in less than six months, and in many instances there may be relapses. The type of acne associated with large blackheads is much easier to remedy than the variety that is associated with extremely small blackheads. This is because it is easy to remove large comedones, but very difficult to remove the small ones, inasmuch as they are often extremely difficult to see. *Acne indurata* often heals in a surprisingly prompt manner. In dispensary practice acne is a very unsatisfactory disease to handle.

Treatment.—In all instances the habits of the individual require a thorough search. Good hygienic living must be enforced. The bowels must be kept open and the diet should be plain but nutritious. Particularly must we exclude all greasy foods from the dietary. Candy, especially chocolates, must be prohibited. It is not at all infrequent to see a severe relapse following close upon the indulgence in chocolate candy. Eating between meals is to be stopped. No pork, pastry, pickles or any article of food that is followed by an outbreak of acne lesions is to be permitted. Indigestion should be corrected.

Pelvic abnormalities should likewise be attended to. As a general rule, pelvic treatment does not help acne, but in certain rare instances it is a benefit. If there is an anæmia, appropriate medication should be given, but it is very rare to find any anæmia in an acne patient of the better class.

Tonics seem to help at times, but more in the dispensary patients than in private patients: this is because no tonic can approach proper modes of life. Cold baths often give a tone to the skin that is very helpful.

Calcium sulphide and arsenic are often used, but in my practice both have almost invariably proven disappointing.

Bacterin treatment is often of great service. Treatment with staphylococcus bacterins alone will often help the pustulation, but totally fail to aid the comedones and papules. If a bacterin is to be employed, the acne bacterin should always be selected. There seems to be no doubt that autogenous preparations are superior to the commercial or stock ones, although these are often extremely useful. Various observers recommend various methods of treatment: some think that the proper initial dose is from 3,000,000 to 5,000,000 killed acne bacilli, and some that an initial dose of 50,000,000 to 100,000,000 should be employed. Personally, I start with 15,000,000, and give

injections every five to eight days, increasing the dose about twenty per cent each time. After a dosage of 100,000,000 is reached the injections should be given only once in two weeks. In cases where there is much pustulation the staphylococcus is always added. Care must be taken to avoid inducing a negative phase, which is shown by the appearance of a new crop of lesions, and which means that the bodily resistance has been temporarily overwhelmed. In addition to the injection of the bacterins local hyperæmia should be induced, beginning with the third day. This may be accomplished by the simple opening of all lesions, or by the application of hot towels to the face for five minutes daily.

The local treatment is of the utmost importance. There are two things that must be done—in the first place the skin must be rendered as dry as possible, and in the second place all comedones must be removed and all pustules opened. In order to remove the grease, the skin should be washed frequently with hot water and soap. A number of lotions and ointments are very useful. One of the best of these is the well-known *lotio alba*, which consists of:

R	Potas. sulphuret.	3 i	4.
	Zinci sulphat.	3 i	4.
	Aquæ, q.s.	3 iv	120.

Kummerfeld's solution is also useful:

R	Sulph. precip.	3 i	4.
	Spts. camph.	3 ii	8.
	Gum tragacanth.	gr. xx	1.250
	Aquæ, q.s.	3 iv	120.

The following ointment is often very valuable:

R	Acidi salicylici	3 ss	2.
	Sulph. precip.	3 i	4.
	Ung. aq. ros., q.s.	3 i	30.

Another good one is:

R	Resorcin.	3 ss	2.
	Acidi salicylici	3 ss	2.
	Sulph. precip.	3 i	4.
	Ung. aq. ros., q.s.	3 i	30.

The salicylic acid or resorcinol should be increased so as to make the skin dry, but not in sufficient quantity to burn or to cause marked peeling, although a slight amount of desquamation is to be desired.

Before retiring the face is to be washed in soap and hot water, the medicine applied rather freely, and the face washed with cold water

and soap in the morning, especially in cold weather. In hot weather it is advisable to use hot water in the morning. It is better to employ a small amount of medication in the morning, but not absolutely essential.

In the very obstinate greasy cases, the best procedure is that suggested by Strobel: the face is washed with a concentrated solution of potassium permanganate, which is allowed to remain on one minute, and is then removed by washing with a weak solution of oxalic acid. The face is then very thoroughly washed with water, and an antiseptic powder applied. This should be done by the physician himself, not oftener than twice a week. If the skin becomes too dry it is well to employ an ointment containing:

R	Sulph. precip.	3 i	4.
	Ung. aq. ros., q.s.	3 i	30.

All blackheads must be removed, which can usually be done by squeezing them out with an invisible hairpin. It is absolutely essential that all of the comedone be removed, for if part is left behind inflammation is almost sure to result. Most of the comedone extractors upon the market are far inferior to a hairpin.

All pustules should be opened, preferably with a scarifier, which is really a fine double-edged straight knife or lance. The large ones should be touched with carbolic acid or the tincture of iodine. The opening of pustules does not leave scars: it is the burrowing of the pus that causes scar formation. The oozing is often persistent after this treatment: this can usually be checked by means of the high frequency current.

Where the blackheads are very small, or where there is an accumulation of detritus about the mouths of the follicles, peeling of the skin must be resorted to. This is best accomplished by the use of an ointment similar to the following:

R	Resorcín.	3 i	4.
	Acidi salicylici	3 i	4.
	Ung. aq. ros., q.s.	3 i	30.

In some individuals this will be too strong, and in others it will be too weak, hence may need some modification. This is applied every night until the first indications of peeling are noticed, which usually takes place by the end of three days. A vast number of comedones are always visible after peeling, and they should be removed. This method should not be resorted to oftener than once in six weeks.

The X-ray is much advocated by some men. As a rule, it is not necessary to resort to it, for results can often be obtained by other means. Where the case is unusually resistant, where the blackheads

are very small, or where very quick results are desired, this remedy may be used. The doses should not be larger than 2 or 3 H-units, with a moderately hard tube, and they should not be frequently repeated.

The high frequency current is much advocated by some, but in the hands of the majority has proven worthless, except to check the oozing that often persists after the opening of the pustules.

Acne in the Negro.—According to my statistics,²⁷ acne is almost as common among negroes as among whites, constituting 8.4 per cent of all skin cases seen among blacks. However, among the pure-blooded blacks it constituted but 5.3 per cent. Fox states that the disease is much less severe in the pure blacks, but I feel that there is but little difference. The clinical course is identical with the course in the whites, and there is no difficulty in diagnosis. Treatment is rather unsatisfactory, for the negroes will not take the trouble to remove comedones.

THE SEBORRHŒAS.

It was formerly the custom to divide seborrhœa of the scalp into two groups, the sicca or dry, and the oleosa or greasy. The careful investigations of Sabouraud have definitely established that there are four types of this disease, showing different symptoms and caused by different organisms. The best account in English literature is found in the work of Jackson and McMurtry.²⁸

SEBORRHŒA CAPITIS.

Synonyms.—Hyperidrosis oleosa; Seborrhœa simplex; Stearrhea simplex.

Definition.—Seborrhœa capitis is an oily condition of the scalp and hair due to a hypersecretion of the sebaceous glands.

Occurrence.—The disease is a very common one: it is frequently seen in both men and women.

Etiology.—Jackson and McMurtry state that the disease is rare in women; possibly true seborrhœa is, but certainly we frequently find an excessive amount of oil upon the scalp of this sex. It is most frequent between the ages of fifteen and fifty, being rare in both childhood and old age. Too free massage of the scalp will often cause a temporary increase in oiliness. Sabouraud claims that the disease is produced by the microbacillus, which is identical with the acne bacillus of Unna and Gilchrist.

²⁷ Hazen: Jour. Cutan. Dis., 1914, xxxii, 705.

²⁸ Jackson and McMurtry: Diseases of the Hair, New York, 1912.

Symptomatology.—The skin of the forehead and nose frequently becomes shiny before the scalp is affected, but this is certainly not always the case, for the reverse is often true. The scalp and hair are abnormally greasy. Inspection of the scalp shows that the follicles are dilated, and that a number of minute, white, vermicelli-like bodies can be squeezed out of them: these are the seborrheic filaments of the French writers. Hyperidrosis is a common accompaniment. The scalp is usually remarkably free from dandruff. At times it is noticed that for a time there will be much dandruff in the scalp, then oil will appear and the dandruff disappear: then the reverse will occur, each alternation lasting from one to six months. Some loss of hair is nearly always produced.

Pathology.—Inoculation occurs by means of personal contact. The bacteria grow down into the follicle. A seborrheic filament results, the filament consisting of epidermal cells, sebum, cellular debris and bacteria. This filament occupies the mouth of sebaceous follicle. The sebaceous glands are hypertrophied. The hair follicles are slightly atrophied.

Diagnosis.—The diagnosis is easy, the greasy condition of the scalp, and the presence of filaments in the follicles almost preclude a mistake. The other forms of seborrhœa always show accumulations of crusts or scales.

Prognosis.—The disease cannot be cured. At times it is entirely masked by pityriasis or pityriasis steatoides. When the hair follicles have been destroyed it is easy to cure, but not until then.

Treatment.—The general health should be looked after. Massage should be avoided, as it stimulates the glands to renewed activity, and the oil furnishes a better medium upon which bacteria can grow. The scalp should be frequently washed with soap and water. The tincture of green soap is excellent for the purpose. Sulphur is one of our best remedies. The following course of treatment is usually outlined by the author. Twelve hours before a shampoo rub the following ointment into the scalp:

R	Sulph. precip.	3 i	4.
	Acidi salicylici	3 ss	2.
	Resorcin.	3 ss	2.
	Ung. aq. ros., q.s.	3 i	30.

After washing the scalp the following lotion is to be applied twice a day:

R	Hydrar. chlor. cor.	gr. iii	.2
	Resorcin.	3 i	4.
	Glycerin	3 ss	2.
	Spts. myrcial.	3 i	30.
	Alcohol, q.s.	3 vi	180.

About a teaspoonful of this lotion should be applied to the scalp, not to the hair, and gently spread over the scalp, avoiding massage. Of course resorcin must not be used when the hair is white or blonde: then salicylic acid should be substituted for it. Sabouraud recommends the following lotion:

R	Sulph. ppt.		
	Alcohol (90° F.) āā	3 iiss	10.
	Aquæ distil.		
	Aquæ rosæ, āā, q.s.	§ iv	120.

PITYRIASIS SIMPLEX CAPITIS.

Synonyms.—Dandruff; Seborrhœa sicca.

Definition.—Pityriasis simplex is a non-inflammatory furfurnaceous exfoliation of the horny layer of the skin of the scalp.

Occurrence.—This disease is almost universal among civilized

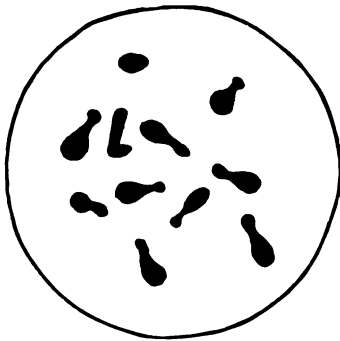


Fig. 26.—Bottle bacilli or spores of Malassez.

peoples, but does not afflict the savages. Children are not affected until they catch it.

Etiology.—Dandruff is not a natural heritage of man: it is an acquired disease. Savages and children are free from it until brought into contact with those who are affected. It is more frequent in men than in women, probably men are more apt to come in contact with infected combs or brushes, either in barber shops or in the course of their travels. Any kind of poor bodily health predisposes to it.

It is now pretty definitely accepted that the disease is of bacterial origin, and the bottle bacillus of Unna, which is identical with the spores of Malassez, is the cause. This bacillus is extremely polymorphous: its principle forms are:

1. Spherical, of various sizes from 2 to 7 microns.
2. Banana-shaped, 6 by 2 microns.

3. Pear or bottle-shaped.
4. Flask-shaped, spherical with single small projection.

A recent article by Kraus²⁹ gives the bibliography to date.

Symptomatology.—The hair may be normal, but is often dry, and it is more or less covered with dry scales, which can easily be brushed off. The scalp is also covered with these scales: the skin is not inflamed. As a general rule, the entire scalp is involved, but at times the disease is much worse in some places than in others, and there may be areas where no scales are visible. As a general rule, there is only a moderate falling of the hair. There may be a considerable amount of itching.

Pathology.—The scaling is the result of a simple hyperkeratosis; it is not a parakeratosis. The scales are composed of mature, normal, epithelial cells of the horny type. Many bottle bacilli can be found in them.

Diagnosis.—The total lack of inflammatory symptoms should enable one to make the diagnosis. In children ringworm may be confused, but is usually more localized, and the fungous can always be demonstrated.

Prognosis.—I cannot agree with the authors who claim that this malady does not cause alopecia, although I grant that it produces only a slight degree. It is probably never cured, but can rather easily to be held in check, if one is willing to take time and trouble.

Treatment.—The treatment is identical with that of seborrhœa capitis that has just been described, except that massage seems to be of distinct benefit.

PITYRIASIS CORPORIS.

Synonyms.—Pityriasis faciei; Pityriasis alba; Seborrhœa sicca corporis.

Definition.—A dry, mildly inflammatory disease of the skin, characterized by a moderate amount of furfuraceous scaling in spots.

Occurrence.—The disease is not especially common, except in the negro.

Etiology.—The etiology is probably similar to that of pityriasis capitis, but as yet has not been proven: it is known not to be a ringworm infection. Toyama,³⁰ who has erroneously described this condition as a new disease under the title of "Pityriasis circinata" came to no conclusions as to its causation.

Symptomatology.—In the white race the disease affects the face.

²⁹ Kraus: Arch. f. Dermat. u. Syphil., 1913, cxvi, 723.

³⁰ Toyama: Arch. f. Dermat. u. Syphil., 1913, cxvi, 243.

It appears as a very mildly inflammatory macule, that spreads peripherally and usually clears up in the center. The edges become scaly, but the scales are white or gray. The spots are usually upon the cheeks or around the mouth. There is some slight itching. Usually there are from two to ten lesions.

In the negro the disease is less inflammatory than in the whites, and the lesions frequently appear upon the body and limbs. The lesions may be as much as six inches in diameter, and do not show any great tendency towards clearing up in the center. The general appearance is that of many fine, white scales, closely adherent to the skin. There may be but one or two lesions, or there may be nearly a hundred.



Fig. 27.—Dry seborrhea of the face, the type so frequently mistaken for ringworm. Lesion is near angle of eye.

Pathology.—There is a considerable hyperkeratosis, and possibly a slight parakeratosis as well, although this is not as yet definitely proven. The underlying skin is normal.

Diagnosis.—*Tinea versicolor* may be mistaken, but in this infection there are usually very many more lesions, and the primary ones are much smaller. In addition the fungous is readily demonstrable. Ringworm of the face, secondary to the scalp, is to be considered, and the only certain way of excluding this is by the failure to find

the parasite. In pityriasis rosea there are no lesions upon the face, and the long axis of all lesions run parallel to that of the ribs.

Prognosis.—The disease is often very resistant to treatment, but can usually be cleared up. In the negro some slight decrease in pigmentation is often left for a time.

Treatment.—An ointment of sulphur and salicylic acid, using about one dram of each to the ounce will eventually cure the trouble.

PITYRIASIS STEATODES.

Synonyms.—Seborrhœa sicca; Eczema seborrhoicum.

Definition.—An inflammatory disease of the scalp, characterized by yellowish, greasy scales and crusts.

Occurrence.—The disease is common, but not as frequent as seborrhœa or pityriasis capitis.

Etiology.—Pityriasis steatodes usually occurs in persons between 20 and 30 years of age, and often in individuals who are already affected with pityriasis simplex. The most pronounced lesions occur in the poorer classes of patients. The *Staphylococcus albus* (*Staphylococcus epidermitis albus* of Welch, the *Morococcus* of Unna, and the *Polymorphous coccus* with gray colonies of Sabouraud) is universally found, and in conjunction with the bottle bacillus is probably responsible.

Symptomatology.—The scalp is usually almost entirely covered with yellowish, greasy scales, that are worse in some places than in others. They may form very distinct crusts in some neighborhoods. The scales adhere to some extent to both the hair and scalp. The underlying scalp may be normal, but is very apt to be somewhat inflammatory. The trouble may extend beyond the hair borders for half an inch or so. The hairs are usually very greasy, and there is nearly always alopecia, sometimes of marked extent. The greasier the condition the greater the alopecia. In many instances there is a secondary acute infection grafted upon the pityriasis, and pustules and oozing may be present in considerable amounts. The condition is usually secondary to pityriasis simplex capitis, and Sabouraud considers it due to a superadded infection with the cocci.

Pathology.—This condition is primarily a hyperkeratosis, with a resultant increase in the number of horny cells which are cast off. The scales contain a great number of bottle bacilli: in addition there are very numerous cocci. The scales are very greasy. The underlying skin shows marked evidences of inflammation: the papillary vessels are dilated. There is an emigration of polymorphonuclear leucocytes upward from the papillæ. In addition there may also be intra-follicular plugs of cornified cells.

Diagnosis.—The diseases which must be differentiated are seborrhœa, seborrhœa with pityriasis simplex, seborrheic dermatitis, eczema, impetigo, psoriasis and ringworm. Seborrhœa can be diagnosed by the vermicelli-like filaments, and by the microscopical findings, that is, the absence of a large number of cocci. In seborrheic dermatitis the underlying skin is considerably inflamed, and other portions of the body are frequently affected. Eczema is also more inflammatory and is apt to show more vesiculation, with intense itching. Psoriasis occurs in well-defined patches with more or less serpiginous borders; the scales are not greasy, and are distinctly dry and white, and lesions are found on other portions of the body, especially the extensor surfaces. Impetigo may closely resemble pityriasis steatodes, but is more acute and less diffuse. The characteristic crusts can often be discovered.

Prognosis.—If the condition is not treated a diffuse, permanent alopecia results. When treatment is given the lesions heal readily, but usually recur as soon as treatment is discontinued. Treatment should be kept up for several years, and even at the end of this time an antiseptic hair lotion should be employed.

Treatment.—At the onset ointment rather than lotions should be advised, as they will cause a quicker response. Sulphur, salicylic acid and resorcinol constitute our therapeutic mainstays. These are applied as directed in the paragraph on the treatment of seborrhœa. The bichloride of mercury and resorcinol lotion should be used as a prophylactic measure against recrudescence.

SEBORRHEIC DERMATITIS.

Synonyms.—Dermatitis seborrhoica; Eczema seborrhoicum.

Definition.—An inflammatory disease which usually begins upon the scalp, but which may spread to the skin, or even apparently be primary upon it, and which is characterized by the presence of more or less sharply-defined, reddish, somewhat elevated areas, often circular in character, that may or may not be covered by yellowish, greasy scales.

Occurrence.—It is a fairly common disease. According to the statistics of the American Dermatological Association it constitutes about two per cent of all dermatoses.

Etiology.—The disease is unusual in children and in the old, it is usually found in those between fifteen and fifty years of age. It is of nearly equal frequency in the two sexes. Well pronounced cases are rare in the negro. Darier believes that all persons with enlarged sebaceous glands and pores are especially liable to this trouble. When

the scales are microscopically examined two varieties of bacteria are constantly found, first the bottle bacillus, and secondly polymorphous cocci with grey colonies. These are the same that are found in pityriasis steatodes and would indicate a causative relationship in the two diseases. In addition to these two the acne bacillus is found in the follicle mouths. Nothing is known as to the relative importance of these different bacteria.

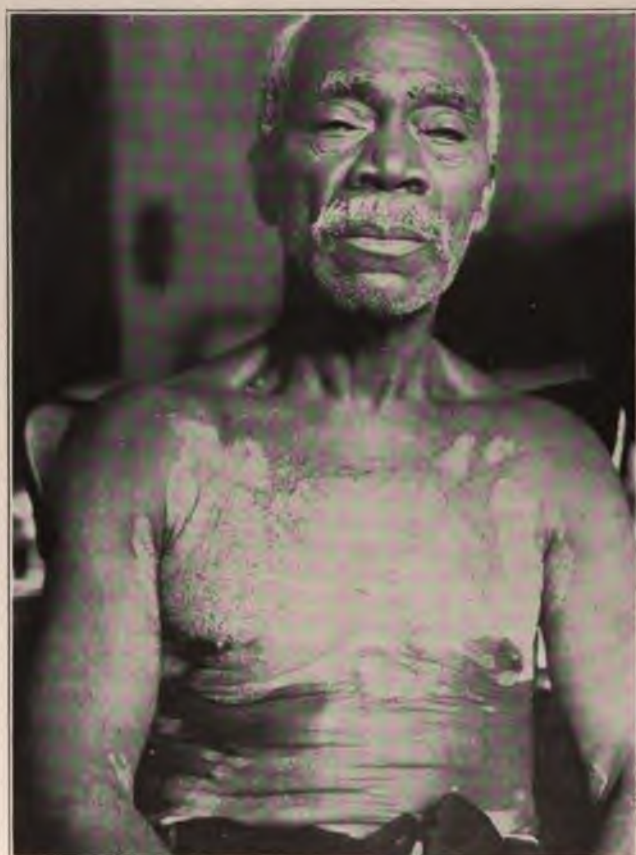


Fig. 28.—Chronic seborrheic dermatitis, rather more diffuse than usual.

Symptomatology.—The disease usually begins upon the scalp in the form of small papules, which may be discrete or grouped and coalescent. The lesions are covered by soft, loosely adherent, yellow crusts that are distinctly adherent. In addition to sticking to the scalp they also adhere to the hairs and may bind them together. The hair is usually greasy, but may be very dry. The skin beneath the crusts is markedly inflammatory. These patches upon the scalp often

extend to the glabrous skin near the hair margins. When the disease extends downwards it usually does so either back of the ears or through the mid-line of the face. Then the forehead, the eyebrows, the nose, the naso-facial and naso-labial grooves, the upper lip, and the chin are affected. In addition the body and limbs are often involved, those parts most often affected being the sternal and interscapular regions. It is also often found in the axillary and genito-

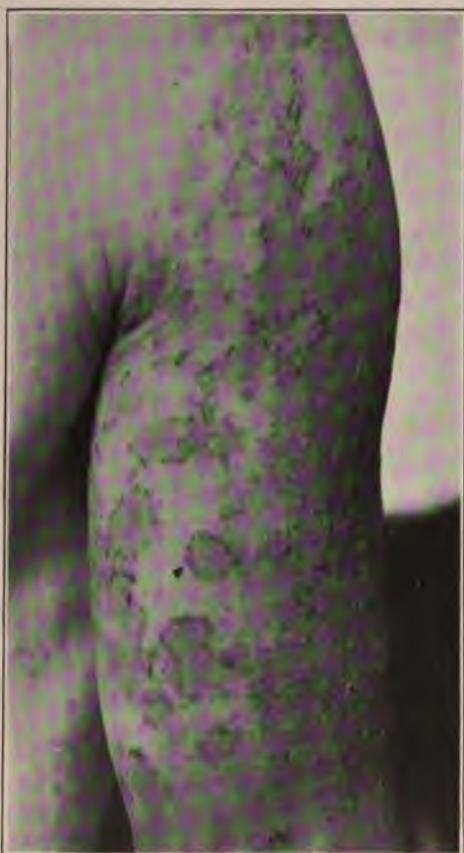


Fig. 29.—Acute seborrheic dermatitis of the annular variety, a common form.

crural regions and quite frequently upon the limbs. Upon the scalp the disease causes alopecia. Upon the body there is more or less itching. Upon the glabrous skin there are two widely varying types of lesions. The first type is the essentially chronic one where heavy yellow crusts, mounted upon circumscribed erythematous bases occur: these are most frequently found upon the chest, but may also occur

upon the mid-line of the back. In the more acute type the lesions are very apt to be circinate, and often involve the limbs, especially the extensor surfaces of the legs and the flexor surfaces of the arms. These lesions may be distinctively erythematous, or they may be formed of rings of little papules. They are not covered by marked scales. Certain other cases of acute seborrheic dermatitis markedly resemble acute cases of psoriasis, and indeed sometimes it is impossible to tell the two apart. The lesions are usually distributed over the trunk and legs, are not over an inch in diameter, are sharply circumscribed, very inflammatory and covered by white scales that are



FIG. 30.—Acute seborrheic dermatitis, a type that is very difficult to distinguish from psoriasis.

not especially greasy. In some instances the lips only are involved, the condition being that of an exfoliating cheilitis. The napkin region of children is occasionally affected. In certain instances, especially in those who sweat a great deal, there is a large patch in either the axillæ or the groins; there are no scales, and but little induration; the color is a deep dusky red, and the edges are well-defined. Taken all in all the cutaneous forms of the disease are distinctly polymorphous, assuming widely different forms in different individuals.

Pathology.—The pathology differs somewhat in the different types. In general there is a hyperkeratosis and some parakeratosis

of the epidermis, a certain amount of epithelial proliferation of the rete cells, so that the intrapapillary processes are occasionally prolonged, and a superficial inflammation of the corium. The subpapillary and papillary vessels are dilated, and there is a rather sharply circumscribed infiltration of the extreme upper portion of the corium with small round cells. Unna thinks that there is an increased secretion of fat by the skin, and that there is also an increased activity of the coil-glands.

Diagnosis.—When the disease is confined to the scalp seborrhœa and both forms of pityriasis must be excluded, and this can usually be done by the lack of inflammation in them. Ordinary eczema differs in itching a great deal more, and in exuding more serum, and

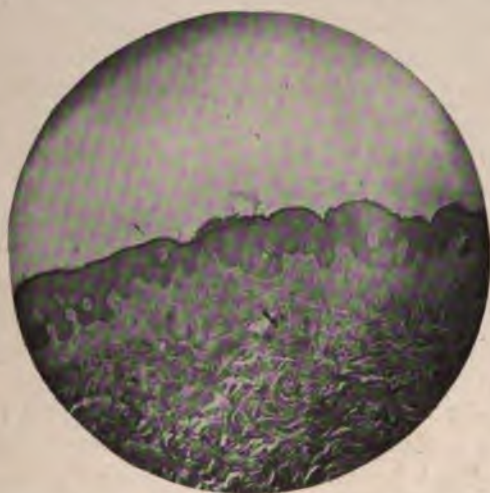


Fig. 31.—Histopathology of subacute seborrheic dermatitis. The findings are similar to those of psoriasis.

in not having greasy scales. Psoriasis may almost defy diagnosis unless the whole body is examined, but as a general rule the scales of psoriasis are not greasy. Impetigo contagiosa develops much more rapidly than seborrheic dermatitis.

The type of this disorder where there are thick, chronic, yellow scales upon the chest or back is very easy to diagnose: the color may suggest favus, but in that infection there is usually more heaping up of the scales, and if they be thin it can readily be observed that they form a ring around each hair follicle, a ring with a depressed center.

The circinate type must be diagnosed from erythema multiforme, pityriasis rosea, ringworm and syphilis. Erythema multiforme usually affects chiefly the hands and forearms, there is the history

of recurring attacks, and there is never any scaliness. In pityriasis rosea the axis of the oval patches is parallel with the direction of the ribs, the lesions usually have a yellowish center with a rosy border, and there is the history of a herald patch, usually upon the flank. In addition there is frequently the history of a sore throat at the onset. In ringworm the onset is gradual, one patch first appearing and then others, either singly or in crops. There are rarely very many lesions, and the fungous can always be found by the microscope. Syphilis rarely assumes an annular form in the white race, it usually has rather more induration, and there are other signs of the disease: the Wassermann is usually positive.

In the more eczematous type there is not so much infiltration, there is usually a dusky, deep red color, and the itching is not very severe.

The psoriasiform type of lesions are very difficult to diagnose from acute cases of that malady. In psoriasis there is usually the history of other attacks of psoriasis, the scalp is not primarily involved, there is usually more eruption upon the elbows and knees than in seborrheic dermatitis, and the lesions tend to be more sharply defined. The histopathology of the two conditions is almost similar.

Prognosis.—Seborrheic dermatitis of the scalp is an obstinate affection, and even when cured is very prone to recur. If treated early it can usually be cured. Upon the body the disease is usually fairly amenable to treatment. The thick yellow patches of long duration usually yield the easiest, but all of the other types are fairly tractable to proper treatment.

Treatment.—In very acute cases upon the scalp it is best to start treatment with a bland ointment such as zinc oxide or the yellow oxide of mercury. In the more chronic cases, however, the same preparations should be employed that are useful in the other seborrheic conditions of the scalp. The chronic thickened patches upon the body are best treated with strong ointments of sulphur, salicylic acid or resorcin. A favorite formula is:

R	Sulph. precip.	3 i	4.
	Acidi salicylici	3 i	4.
	Resorcin.	3 ss	2.
	Ung. aq. ros., q.s.	5 i	30.

Chrysarobin has likewise been recommended: dissolve one and one-half parts of chrysarobin in thirty parts of chloroform, apply this to the patch, allowing the chloroform to evaporate, and then paint over with flexible collodion. The object is to peel off the affected area, and when this is accomplished the results are often excellent, no return taking place.

In the acute cases it is best to start treatment with a milder pre-

paration of sulphur and salicylic acid, but it must always be borne in mind that the disease is microbic in origin.

Gilchrist speaks very favorably of large doses of staphylococcus bacterin; it is possible that the acne bacterin might be combined with advantage.

Seborrheic Dermatitis in the Negro is interesting. In the first place the skin of the negro is naturally oily, but his hair is not as a rule. It is unusual to see the severe forms of seborrhœa, pityriasis simplex, pityriasis steatodes or seborrheic dermatitis of the scalp in this race. As already indicated the dry forms of seborrhœa of the body are relatively common. I have seen but two cases of chronic seborrhœa of the dry scaly type in negroes. Likewise the acute forms, either the annular type or the psoriasiform variety, must be very rare. While they undoubtedly do occur, so far I have not encountered them.

DIPHTHERIA OF THE SKIN.

Definition.—An infectious disease of the skin caused by the Klebs-Loeffler bacillus, and manifested by various types of lesions.

Occurrence.—This form of diphtheria is rare, comparatively few cases being upon record: at the same time it is probably less infrequent than has usually been believed, for it is not often looked for.

Etiology.—Inoculation of the skin occurs by means of auto-inoculation, from infected articles, and from one person to another. The exciting organism is the Klebs-Loeffler bacillus.

Symptomatology.—According to Knowles and Frescoln³¹ there may be several types. There is the false-membrane type, the ulcerative, gangrenous, eczematous, impetiginous eczema-like, pustular, impetiginous, ecthymatous, vesicular, bullous, dermatitis-herpetiformis-like, tumors and abscesses.

Diagnosis.—The diagnosis can be made by staining the organisms with the Neisser stain. The pseudo-diphtheria bacillus must be differentiated.

Prognosis.—Unless accompanied by throat lesions the mortality is low.

Treatment.—Antitoxin should be used.

The pseudo-diphtheria bacillus has been found in many different types of skin lesions. The usual lesions resemble those of an impetiginous eczema and are very persistent. The cases are probably best treated by antiseptic measures, and by the use of autogenous bacterins.

³¹ Knowles and Frescoln: Jour. Amer. Med. Assn., 1914, lxiii, 398.

ANTHRAX.

Synonyms.—Pustula maligna; Anthrax maligna; Malignant pustule.

Definition.—Cutaneous anthrax is a specific acute infection due to the anthrax bacillus, and characterized by a local area of intense inflammation.

Occurrence.—The disease is very rare.

Etiology.—The exciting organism is the anthrax bacillus. Infection takes place through handling diseased animal products, such as hides, hair, meat, etc. The disease usually occurs among the employes of brush factories, bristle works, tanneries, abattoirs and docks. For obvious reasons only adult males are affected.

Symptomatology.—The incubation period is believed to be from one to three days. The primary lesion is almost always single, and usually occurs upon the hand, face or neck. A slight red papule is first noted: in about one day this becomes vesicular, and an intense inflammatory areola forms. The vesicle soon ruptures and is covered by a blackish eschar, covering a central depression. Around this central necrotic mass there is often a ring of vesicles. General infection may ensue and the patient promptly die, or the gangrenous central area may slough out and recovery take place.

Pathology.—The development of the bacilli usually takes place around the subpapillary blood plexus, and the number of bacteria is very great. In addition to this there are signs of a very intense inflammatory process in both the rete and corium.

Diagnosis.—The disease is characterized by the central area of necrosis, around which vesiculation often occurs, and by the intense neighboring inflammation. In doubtful cases a microscopic examination should settle the diagnosis, for the bacilli are fairly characteristic.

Prognosis.—The outlook is not as bad as has been generally believed, the mortality for this cutaneous type of infection running from ten to seventeen per cent. When generalized infection takes place the outlook is hopeless.

Treatment.—Opinions as to treatment vary widely, some surgeons claiming that the entire pustule should be widely excised, preferably with the actual cautery, and others claiming just as high a percentage of cures as the result of an expectant plan of treatment. Good results have been claimed for the anti-anthrax serum prepared by Sclavo.

GLANDERS.

Synonym.—Farcy.

Definition.—An infectious disease due to the *Bacillus mallei*.

Occurrence.—This disease is very rare.

Etiology.—The *Bacillus mallei* is the exciting cause. In man the infection comes only in those who have to do with diseased horses or mules.

Symptomatology.—There are two types, the acute and the chronic. In the former there is a local abscess with involvement of the lymphatics, the so-called farcy buds, and these usually go on to suppuration. There are usually the acute symptoms of a septicæmia. Chronic farcy is similar, but large tumors may develop along the lymphatics, suppurate, and leave ulcers.

Diagnosis.—The chronic type of the disease must be differentiated from sporotrichosis: this can be done by the bacteriological examination. The inoculation of the bacteria into a male guinea-pig produces characteristic lesions of the testicles.

Treatment.—All lesions should be opened and cauterized: the outlook is bad however, although some cases of the chronic farcy do recover.

CHANCROID.

Synonyms.—Soft sore; Soft chancre; Ulcus molle.

Definition.—A specific acute infection, caused by the *Bacillus* of Ducrey, usually of venereal origin, and characterized by one or more sharply circumscribed ulcers.

Occurrence.—Chancreoids are very common, but are much more commonly seen in genito-urinary rather than in dermatological practice.

Etiology.—In practically all instances the soft sore is of venereal origin, and occurs upon or near the sexual organs.

Symptomatology.—The incubation period of the chancreoid is short, usually from three to four days. It is usually situated, in men, near the corona, but may occur upon the body of the penis, or even upon the abdomen or thighs. In a few instances it has been recorded upon the hands. The primary lesion is a small vesicopapule or pustule, that lacks marked induration. It rapidly develops into a superficial ulcer, usually about one-half inch in diameter. Auto-inoculation usually occurs and from two to six sores are common. The neighboring glands are swollen and soft, and show a tendency to suppurate. Phagedæna may result, presumably from mixed infection.

Pathology.—There is destruction of the epidermis, marked signs of inflammation, and an infiltration with polymorphonuclears, small round cells and plasma cells.

Diagnosis.—This lesion must be differentiated from syphilis. This

TUBERCULOSIS OF THE SKIN

weeks the pig should be killed. If the tissue was tuberculous the animal will show evidence of tuberculosis at autopsy.

The search for tubercle bacilli in the tissues is usually unsatisfactory, unless the tissues be emulsified with antiformin, and the sediment stained in the usual way. Even this test is not as satisfactory as the inoculation method.

The use of tuberculin deserves mention. The eye method of Calmette is not now employed to any great extent, as many observers feel that there is some danger of injuring the eye. Hamman and Wolman, in their excellent book upon tuberculin, consider this method harmless.

The von Pirquet test is of value only in children according to the statement of its author and of the majority of tuberculosis experts. After the age of five nearly every one reacts, so a positive reaction is of no value. It is strange how many dermatologists still cling to this test for adults. The von Pirquet test consists in scarifying the arm and then applying a drop of the old tuberculin to the lesion. The Moro test, in which the tuberculin is applied in ointment form, has the same limitations.

The subcutaneous test has considerable more value. As a general rule the old tuberculin is employed and the initial dose is $1/5$ milligram. If there be no response to this a second dose of $1/2$ milligram may be given four or five days later. If this is still unsuccessful 1 milligram may be given, then doses of two and five milligrams. If there be no reaction to 5 milligrams it may be safely assumed that the patient is not tuberculous. The reaction consists of a marked febrile reaction coming on about twenty-four hours after the injection, and lasting from ten to twenty hours. There may also be a focal reaction at the site of the lesion, indicated by increased signs of inflammation.

LUPUS VULGARIS.

Synonyms.—Lupus; Lupus vorax.

Definition.—A chronic granuloma, caused by the tubercle bacillus, characterized by definite tubercles and usually terminating in ulceration.

Occurrence.—In America the disease is very much rarer than in Europe. According to the statistics of the American Dermatological Association it constitutes about one-quarter of one per cent of all dermatological cases. It is equally common in whites and negroes.

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The disease is due to the primary invasion, from the tubercle bacillus. Whether the human

or the bovine type of organism is responsible for the greater number of cases is still unsettled. The disease usually affects the young, it being rare to find a case beginning in a person over twenty years of age. Females are more often affected than are males. It is much commoner among the lower strata of society than among the higher. In many instances the portal of entry is apparently through a lesion induced by trauma. Cases have been recorded after tatooing, after circumcision and following various accidents. In one of my cases it followed the crushing of a finger.

Symptomatology.—The most common site for this trouble is on the face, although other parts are by no means exempt, and the hands



Fig. 32.—Lupus vulgaris of the nose in a young colored girl. There was a more extensive lesion upon the hand. (Gilchrist's case.)

frequently suffer. The nose is frequently the starting point for the infection. The disease begins by the development of several tubercles in the upper portion of the corium, and these appear to the eye as small, reddish-brown nodules that are indurated and rather deeply seated. Peripheral spreading takes place so that a patch is soon seen. This is of a reddish color, but under pressure with a glass slide the individual tubercles can at times be made out, appearing as "apple-jelly nodules." After a time the older tubercles tend to break down

and then ulceration results. The ulceration is shallow, irregular, and the borders of the skin overhang the ulceration. Further growth is always slow and it may be some time before the patch is as much as one inch in diameter; usually, however, it takes from three to six months for a lesion to reach this size. Shortly after ulceration a crust forms, which may be of varying thickness. After some little time, usually a year or more, the center of the lesion heals spontaneously, the resulting scar being soft and atrophic, and the ulceration



Fig. 33.—Lupus vulgaris of ten years' standing. The disease began after the crushing of a finger. Note the extensive formation of scar tissue.

is at the edge of the advancing lesion. New islets of infection may, however, arise in the scar tissue, and new ulcerations form there. In some instances there is almost no tendency for scar formation to occur, and there is simply one large ulcer. In other instances there is an overgrowth of granulation and inflammatory tissue from the bottom of the ulcer so that a more or less hypertrophic mass is formed. According to practically all of the text books it is very easy to distinguish the characteristic soft, yellowish nodules at the edge of

the lesion, but I must confess that this has usually been very difficult to see satisfactorily, and I have never dared to base a diagnosis upon this point alone. In some instances the lesions may remain stationary for many months or even years, and then rather suddenly spring into life anew. In some few instances ulceration never takes place, the lesions being absorbed and leaving an exfoliating scar, the so-called *lupus exfoliatus*. As a general rule, however, the disease involves a considerable area upon the face, and the scar formation is often excessive and very disfiguring, for the features are markedly distorted. As a general rule when the nose is attacked both the cartilage and bone are spared for a very considerable length of time. The draining glands may become distinctly tuberculous, although this is not the general tendency.



Fig. 34.—A long standing case of lupus vulgaris, the lesions of which have become slightly hypertrophic. (Collection of Dr. Gilchrist.)

Lupus of the mucous surfaces is not especially common, even when the neighboring skin has been the site of the trouble for a long time. There is usually a superficial ulceration, which may be more or less serpiginous, or a raw granulating patch may appear.

A rare form is the *lupus vulgaris sclerosus erythematoides* of Leloir, which closely simulates lupus erythematosus. It is very slow in its growth, spreads peripherally and never ulcerates. It is usually of a dusky red color, disappearing under pressure, and is slightly covered by fine whitish scales. There is a good deal of underlying infiltration, it is slightly raised at the border and depressed at the center, and

tubercles may occasionally be distinguished if the skin is put upon the stretch. This form is undoubtedly sometimes mistaken for lupus erythematosus, and the correct diagnosis is probably overlooked quite frequently.

In certain instances lupus may be very extensive and much of the surface be affected.

Pathology.—The pathology of tuberculosis of the skin is essentially that of tuberculosis in other portions or organs of the body. The accounts of Unna, Bowen³² and Fordyce are excellent. The following account is taken largely from a recent article by Fordyce,³³



Fig. 35.—Nearly healed lupus vulgaris of eighteen years' standing. Note the extensive loss of pigment, and the distortion of the features through scar formation.

which is beautifully illustrated. The tubercle is the characteristic feature of the infection. Some tubercles are composed almost entirely of lymphoid cells, while others show a preponderance of epithelioid and giant cells. The amount of caseation varies in different infections. In its histological structure lupus varies. In general the lesion consists of an agglomeration of tubercles of the epithelioid-giant cell and lymphocyte type with but little necrosis. There is usually a surrounding cellular infiltrate of an inflammatory charac-

³² Bowen: Boston Med. and Surg. Jour., Nov. 12, 1891, 516.

³³ Fordyce: Jour. Cutan. Dis., 1914, xxxii, 23.

ter. If areas of caseation are produced they are apt to be surrounded by giant cells. When the process develops in the upper part of the corium diffuse infiltration is more apt to follow, and there is usually some extension into the deeper tissues by way of the hair follicles, which explains why relapses so frequently follow the superficial destruction of lupus tissue.

Diagnosis.—Probably cancer and syphilis are most often mistaken for lupus, and for either error there is now very little excuse. Syphilis is not common at an early age, it usually spreads very much more rapidly than does lupus, and the ulcers are clean cut, "punched out" as it were. The Wassermann reaction, the therapeutic test, or the excision of tissue for diagnosis, should always clear the diagnosis.

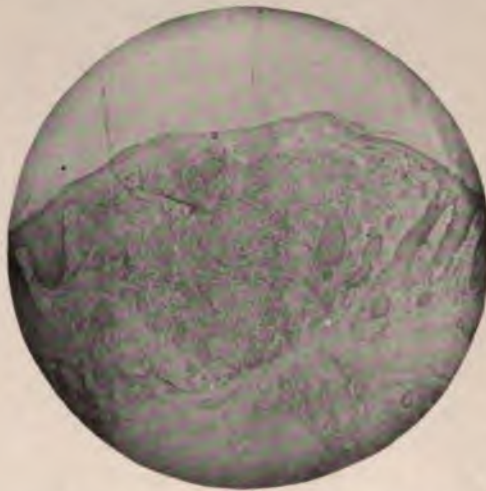


Fig. 36.—Low power photomicrograph of an early lesion of lupus vulgaris. Note the comparatively deep extension of the process.

Cancer is not a disease of early life, it usually comes on after the affected person is forty years of age. In cancer the edge is usually stony hard and somewhat elevated. The two should not be confused, but it must always be borne in mind that cancer may develop upon an old standing lupus.

Prognosis.—Lupus itself rarely kills. At the same time it must be remembered that lupus is a chronic disease and one that is extremely rebellious to treatment, and that an early cure cannot be promised. Usually a considerable amount of scarring results. To secure good results one must be just as thorough as he is in the treatment of basal-celled cancer. There seems to be more danger of tuberculous skin patients dying of some other form of tuberculosis

than is generally believed. Forchhammer³⁴ reports that of 1,190 lupus patients treated at the Finsen Institute no fewer than 81 died of tuberculosis.

Treatment.—In many ways this malady is comparable to basal-celled cancer. The disease, while it often spreads slowly, nevertheless spreads surely, and often invades the corium to a considerable depth. It is very prone to recur, even after operative interference or after X-ray treatment.

First of all thorough constitutional treatment must be advocated. The patient should get all of the fresh air that he possibly can, he should avoid undue fatigue, and his food should be nourishing and abundant. Internal remedies are probably of no specific value, except as they go to build up a patient's resistance. As is well-known medication by mouth is almost valueless in pulmonary tuberculosis, and is of no more value in cutaneous manifestations of the same infection.

Tuberculin is of doubtful value: it has proven worthless in several cases that I have followed, but inasmuch as it is of undoubted value in the pulmonary form it may at times be of considerable value in lupus. The initial dose should be low, not over one one-thousandth of a milligram, and the injections should not be repeated oftener than once each week, gradually increasing the dosage, but never sufficiently to cause a reaction. Hamman and Wolman's³⁵ book may be consulted for further details as to the exact application of this mode of therapy.

The local treatment is exceedingly important. In the very early cases where there is but a small lesion the ideal form of treatment is operative removal, the incision going wide and deep, and preferably being followed by the application of a caustic or of the cautery. The resulting scar is usually not severe. Even in more extensive cases I feel that the same treatment is probably the best, provided that it be thorough. If the lesion be upon any part other than the face there can be no question as to its advisability, and even upon the face it must be very seriously considered. If the actual cautery cannot be employed, and this is difficult around the eye, the lesion can be thoroughly curetted, and then cauterized with the acid nitrate of mercury, as advocated by Sherwell.³⁶ Cauterization should be applied only to a dry field, the acid should be allowed to act for from ten to fifteen minutes, and should be neutralized with an excess of dry sodium bicarbonate, which will form its own dressing.

³⁴ Forchhammer: *Arch. f. Dermat. u. Syphil.*, 1908, xcii, 3.

³⁵ Hamman and Wolman: *Tuberculin in Diagnosis and Therapy*, Philadelphia, 1912.

³⁶ Sherwell: *Jour. Cutan. Dis.*, 1910, xxviii, 487.

Heidingsfeld³⁷ has recently advocated the use of trichloroacetic acid, which is employed upon a swab or toothpick, applied directly to the tubercles, and with which he has certainly obtained some very beautiful results. The caustic pastes, consisting of either arsenic or zinc chloride should not be advocated, although they are much used by many dermatologists. They are very painful, they are hard to control, and they are not as efficient as the curette followed by a caustic, for the feel of the curette will tell how much tissue should be removed.

Carbon dioxide snow is not satisfactory, as Pusey himself admits.

The X-ray has been much used, and the probabilities are that it has a wide field of usefulness in this trouble. We should use only two or three massive, measured doses, just as in carcinoma. Small doses should be avoided. Formerly it was thought that the majority of cases of lupus recurred after X-ray treatment, but with the new means of employing this remedy we should be able to obtain very much better results.

The Finsen light treatment has given excellent results in the hands of its originator, and also in other places. While as many cures can probably be obtained by other methods it is doubtful if as good cosmetic results can be produced. The exposures last from three-quarters to one and one-half hours, and from two to three exposures are given to each area. The various other therapeutic lamps are not nearly so effective.

In one interesting case under my care Manning³⁸ applied old tuberculin locally in Lugol's solution, driving it in by means of the positive pole of the galvanic current. The case was very much improved under this treatment, but it is questionable whether the iodine or the tuberculin was responsible for this change.

Jungmann's monograph³⁹ on the treatment of lupus is worthy of careful study by all who see much of this malady.

TUBERCULOSIS VERRUCOSA CUTIS.

Synonyms.—Verruca necrogenica; Anatomic tubercle (for the simple forms).

Definition.—A chronic infection of the skin, caused by the tubercle bacillus, and characterized by warty outgrowths.

Occurrence.—According to Pollitzer's figures this disease is about one-fourth as frequent as lupus vulgaris, so it is not common.

³⁷ Heidingsfeld: Jour. Amer. Med. Assn., 1914, lxiii, 1352.

³⁸ Manning: Virginia Med. Semi-Monthly, 1913, xviii, 318.

³⁹ Jungmann: Arztlicher Bericht aus der Heilstätte für Lupuskranken; Ergänzungsband zum Arch. f. Dermat. u. Syphil., 1911.

Etiology.—So far as is known the etiology is the same as in lupus. However, it should be noted that physicians, butchers, cooks and all who are called upon to handle tuberculous material, either in the form of dead meats, or of the living subjects, are very apt to develop the so-called anatomic tubercles, which are really the starting point of the more severe verrucose type of tuberculosis.

Symptomatology.—The *anatomic tubercle*, is the simplest form of this type of tuberculosis cutis. It is a sharply localized, wart-like growth, usually appearing upon the knuckle or other parts of the



Fig. 37.—An early lesion of tuberculosis verrucosa cutis in a characteristic location. (Strobel's case.)

hand or forearm. It begins as a small papule, which increases slowly but surely in size until it has acquired a diameter of nearly an inch. The surface is distinctly papillary, and at times a small amount of pus can be squeezed out from between the papillæ. In other instances the surface is dry and rough. When the latter condition is observed there is very little evidence of inflammation, but in many cases the lesion is distinctly red. The edge is sharply circumscribed, and there is usually some superficial induration present. There is some tendency for central healing, and in some instances complete resolu-

tion takes place: in many other cases, however, other tubercles form in the immediate neighborhood.

Tuberculosis verrucosa cutis starts just as does the anatomic tubercle, but new lesions appear in the vicinity of the old, and the individual patches grow much larger, often covering an area six or more inches in diameter. The lesions are distinctly verrucose, pus may exude, and more or less inflammation is nearly always present.



Fig. 38.—A late case of tuberculosis verrucosa cutis. (Gilchrist's case.)

The disease always spreads peripherally, and at times there is a tendency for central healing, with scar formation, to occur, but this is usually not marked. There is very rarely any true ulceration. Its favorite site is the knuckles, from which it may spread to the back of the hand, the fingers, and at times the palm. It is slow in its course, often remaining stationary for years. It is very rare for complete resolution to occur spontaneously. In very exceptional instances the disease may become distinctly fungous or papillomatous.

Pathology.—According to Fordyce the histological picture is fairly characteristic. "The surface of the rete is irregularly hollowed out by an enormously hypertrophied horny layer, in places parakeratotic and in others hyperkeratotic, and presents here and there whorls. Collections of polymorphonuclear leucocytes are also frequent. The stratum granulosum in some areas is missing, in others it is thinned or increased. The rete is thinner than usual over the hypertrophied papillæ and between them produces an irregular down-growth. The entire cutis may be involved, but it has been my experience to find the process limited to the superficial layers as a diffuse

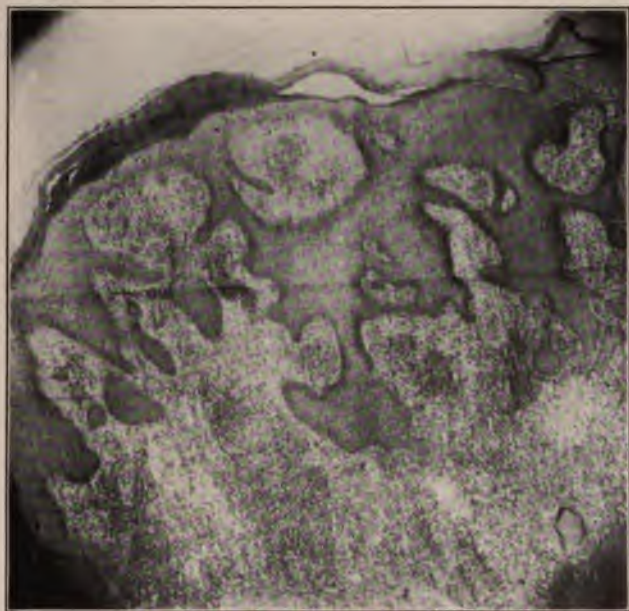


Fig. 39.—Histopathology of tuberculosis verrucosa cutis. Note the epithelial hypertrophy, which may at times simulate carcinoma.

infiltration with no distinct tubercles and few giant cells. A non-tuberculous infiltration, rich in polymorphonuclear leucocytes, disguises in a measure the typical infiltration. Sclerosis of the underlying connective tissue is often a feature."

Diagnosis.—In typical cases situated upon the knuckles the diagnosis is easy, but when the disease is upon other parts of the skin the diagnosis is often difficult. The disease bears a striking resemblance to blastomycosis, from which it can in reality only be distinguished by finding the organism of the latter malady. The histological picture is usually a trifle different, for in blastomycosis there

are very numerous miliary abscesses, filled with polymorphonuclears, and usually showing the characteristic organisms. Verrucose eczema or dermatitis also closely resembles this form of tuberculosis, and may occasion extreme difficult in the diagnosis, the only sure test being the inoculation of some of the suspected tissue into a guinea-pig.

Prognosis.—The outlook is the same as for lupus vulgaris.

Treatment.—The same treatment as is recommended for lupus applies here. It is worth noting that because of the rather more superficial type of the infection radical cure is somewhat easier. I prefer surgical removal.



Fig. 40.—Acute tuberculous ulcer in a patient dying from pulmonary tuberculosis. (B. M. Randolph's case.)

ACUTE TUBERCULOUS ULCER.

Synonyms.—Tuberculosis cutis vara; Tuberculosis cutis orificialis.

Definition.—Tuberculosis of the skin, usually extending from tuberculosis of the mucous membranes.

Etiology.—This form occurs only in those subjects who already have internal tuberculosis, and is due to a spread of an already existing infection. Whether this takes place from without or through the lymphatics is not always clear.

Symptomatology.—The earliest lesion is usually a number of

tubercles, closely grouped, which undergo rapid softening and hence ulcer formation. The disease is most often seen at the angles of the mouth, and is probably secondary to tuberculosis of the mucous membranes. It has also been known to occur about the anus and genitalia. The ulcers are very superficial, ragged and irregular, with the skin overhanging, and are usually covered by a thin crust, the removal of which discloses the ulcer floor, which resembles unhealthy granulation tissue. They are rarely painful. The lesions upon the mucous membranes are often of a rather striking whitish color.

Diagnosis.—The diagnosis is only too easy, the presence of inner tuberculosis, combined with the usually present ulcers of the mucous surfaces, render it not at all difficult to recognize this condition.

Prognosis.—The condition usually indicates a grave infection, although Kaposi has noted some recoveries.

Treatment.—Local treatment is usually of very little avail, although caustics may be tried.

MILIARY TUBERCULOSIS OF THE SKIN.

Miliary tuberculosis of the skin is chiefly seen in children. It is embolic in character, corresponding in origin to miliary tuberculosis in other parts of the body. It appears as discrete, small, disseminated lesions, which may be macular, papular, vesicular or pustular in type, and which usually go on to ulceration. The outlook is bad.

SCROFULODERMA.

Definition.—Tuberculosis of the skin, due to extension from a tuberculous gland.

Occurrence.—The disease constitutes about two-tenths of one per cent of all dermatoses. Considering the number of cases of glandular tuberculosis that one sees in the hospital wards this condition is rather infrequent.

Etiology.—A tuberculous gland becomes softened and breaks down, with the formation of a sinus leading to the skin. The skin in turn becomes infected.

Symptomatology.—As already indicated the glandular type of tuberculosis is the first stage, then the formation of a sinus, then the cutaneous infection radiating out from the walls of the sinus. It is most common about the glands of the neck. Other portions of the body may be involved, and it is probable that a similar type of tuberculosis may arise from subcutaneous tuberculous nodules, which may or may not be connected with the lymphatic system. There is usually considerable crusting, and when the crust is removed a ragged

ulcer can be seen beneath. The course is very slow, and spontaneous healing with the formation of a soft scar frequently results.

Pathology.—According to Fordyce: "Scrofuloderma of all forms of skin tuberculosis shows necrosis in its purest form. Distinct epithelioid-giant cell tubercles may be present, or a diffuse infiltration of giant cells, plasma cells, and polynuclear leucocytes. The last may be collected in abscess formation. Throughout there are areas of ne-



Fig. 41.—Scrofuloderma. (After Ohmann-Dumesnil.)

crosis with leucocytes or fragmented nuclei. The vessels are either patent, with thickened walls, or are completely occluded."

Prognosis.—The prognosis is rather good, if proper treatment be given.

Treatment.—The treatment is essentially that of glandular tuberculosis. If a surgical operation be decided upon a wide area of skin must be removed at the same time. In view of some of our late experience at Freedman's Hospital massive doses of the X-ray are well worth trying in these conditions.

ERYTHEMA INDURATUM.

Synonyms.—Bazin's disease; Erythema induratum serofulosorum

Definition.—A sluggish disease, usually upon the legs, characterized by subcutaneous nodules, that either absorb or necrose.



Fig. 42.—Erythema induratum (Bazin's disease), of a serpiginous type. Note beginning ulceration in lowest lesion. (Collection of Fordyce and MacKee.)

Occurrence.—The disease is very unusual.

Etiology.—As Whitfield⁴⁰ has well pointed out there are a num-

⁴⁰ Whitfield: Brit. Jour. Dermat., 1909, xxi, 1.

ber of different conditions that may give rise to inflammatory nodules of the corium, and as they all appear much alike it is no wonder that there has been much confusion as to the etiology. Undoubtedly, however, some cases are directly due to the tubercle bacillus, for Thibierge and Ravaut⁴¹ have been able to reproduce tuberculosis in guinea-pigs by the inoculation of tissue from these lesions. Clinically the disease is apt to attack young women who are forced to spend much of their time standing.

Symptomatology.—The onset is insidious: several subcutaneous nodules appear upon the outer or posterior aspects of the lower leg. The nodules gradually enlarge, until they become from one-half to one and one-half inches in diameter. The skin over them becomes purplish in color, and is soon firmly attached to the growths. The nodules are very apt to break down into ulcers, which are deep, with irregular edges, and grayish or reddish bases. When healing takes place there is a red scar, that later becomes white. In some instances absorption takes place.

Pathology.—The trouble begins in the hypoderm, and the general picture is that of a chronic inflammation. There are many epithelioid and small round cells, and giant cells often occur. A granular necrosis of the center of the mass usually occurs.

Diagnosis.—Syphilis often gives very much the same picture, but as a rule the lesions in erythema induratum are more symmetrical and the ulcers are not as cleanly cut. Erythema nodosum is more apt to occur upon the anterior aspects of the limbs, and is more acute: in addition the lesions only rarely go on to necrosis. Varicose ulcers are associated with varicose veins, and are more apt to occur nearer the ankle. There is a possibility that there is an obscure group of skin diseases, not of tuberculous origin, that give a clinical picture similar to erythema induratum, but as yet this point has not been definitely decided.

Prognosis.—The prognosis is distinctly favorable, although the disease is always chronic. If the patient can rest the outlook for a speedy recovery is much brighter.

Treatment.—There are three main points in treatment. The first is to give the individual the same treatment that a tuberculous patient should have, the second is to keep the leg elevated, and the third is to use antiseptic ointments locally. Stelwagon especially recommends the gelatine paste fixed dressings. MacKee⁴² has had fair results with tuberculin.

⁴¹ Thibierge and Ravaut: *Annal. de Dermat. et de Syphil.*, 1899, 513.

⁴² MacKee: *Jour. Cutan. Dis.*, 1915.

NODULAR TUBERCULOSIS.

Wende⁴³ has recently published notes upon a remarkable case of chronic nodules of the hypoderm, which both microscopical examination and inoculation experiments proved to be tuberculous. Some of the nodules were a full half inch in diameter, and diagnosis was impossible without laboratory confirmation. The importance of such cases lies in the fact that we must broaden our conception of the forms of tuberculosis of the skin, and also in the fact that similar cases may form a connecting link between the frankly infectious cases, and between the sarcoids and sarcomata as pointed out by Sutton.⁴⁴

LICHEN SCROFULOSUS.

Synonyms.—Lichen serofulosorum.

Definition.—A chronic, mildly inflammatory disease, occurring in tuberculous subjects, and characterized by groups of papules.

Occurrence.—Very rare.

Etiology.—This disorder is usually thought to be due to tuberculous toxins, although one or two observers have reported the finding of tubercle bacilli in the tissues. This work has been well summarized by Gilchrist.⁴⁵

Symptomatology.—Persons between the ages of three and twenty are usually affected. The trunk is chiefly affected. The primary lesion is a papule, usually only one or two millimeters in diameter. They arise close together, in groups that are roughly circular or oval and that may show a tendency to central involution. At first they are bright red but later become yellowish or brownish, but they do not coalesce, although they are later covered by minute scales. The course is exceedingly chronic, new patches arising from time to time. Scar formation results only exceptionally.

Pathology.—Gilchrist states that there are two striking features: first semiglobular-looking masses in the horny layer, especially around the hair follicles, and second, changes in the upper portion of the corium, which resemble miliary tubercles.

Diagnosis.—The diagnosis is to be made from miliary papular syphilis, keratosis pilaris, papular eczema and pityriasis rosea. In syphilis other evidences of the disease can be found, and the eruption is not limited to the trunk and the duration is shorter; in keratosis pilaris most of the lesions are upon the extensor surfaces of the limbs; in eczema there is much itching, which is lacking in lichen serofulosus,

⁴³ Wende: *Jour. Cutan. Dis.*, 1911, xxix, 1.

⁴⁴ Sutton: *Dermat. Wehnschr.*, 1914, lviii, 537.

⁴⁵ Gilchrist: *Bull. Johns Hopkins Hospital*, 1899, 84.

and the disease tends to be more strictly grouped, while the lesions coalesce; in pityriasis rosea, especially in the negro, the similarity may be striking to the eye, but it is more acute, the papules usually coalesce, and the long axes of the patches run parallel to the ribs.

Treatment.—The disease usually responds well to treatment. Cod-liver oil is often given internally, while vaseline or some oily substance may be rubbed in externally.

LICHEN NITIDUS.

Lichen nitidus is a very rare disease, possibly because many cases have been overlooked. It is generally believed to be due to tuberculous toxins, although there is no good proof of this at present. The lesions are small, flat, sharply defined papules, that are usually situated upon the genital organs, the lower abdomen, or the flexor surfaces of the elbows and the palms. The lesions are of the same size, are pale pink or yellowish in color, do not form close groups and do not coalesce. They are very chronic. Pathologically the disease is a granuloma seated in the extreme upper portion of the corium. Sutton's case was cured by the external use of salicylic acid and resorcinol. Two of the best papers on the subject are by Arndt⁴⁶ and Sutton.⁴⁷

FOLLICLIS.

Synonyms.—Tuberculides; Tuberculosis disseminata; Small pustular scrofuloderm.

Definition.—Folliclis is a small pustule or collection of discrete pustules of a embolic tuberculous nature.

Occurrence.—The disease is rare, but not as rare as was once believed, for many cases are overlooked.

Etiology.—In all instances these lesions arise as the result of tubercle bacilli in other portions of the body entering the blood stream and forming new lesions in the walls of the blood vessels. The condition is not necessarily a terminal stage of tuberculosis.

Symptomatology.—The lesions usually develop upon the limbs, especially the forearms, while the face is practically always free. The lesions vary in number from three or four to a score or even more. They are usually seen in young subjects, not in the aged. The lesions appear clinically as deep-seated pustules around a hair follicle: these pustules break down and form a superficial, very small ulcer that eventually heals with the formation of scar tissue.

⁴⁶ Arndt: *Dermatol. Ztschr.*, 1909, xvi, 551, 645.

⁴⁷ Sutton: *Jour. Cutan. Dis.*, 1910, xxviii, 597.

Pathology.—Dr. L. W. Ketron, who has recently been studying this condition in the dermatological department of the Johns Hopkins Hospital states that the histopathological picture is absolutely characteristic of tubercle.

Diagnosis.—The disease must be recognized from ordinary pyogenic affections and from syphilis. The first can be done by its long course, and by a microscopic examination of a bit of excised tissue. In the latter disease the lesions are usually more widely disseminated, and there are usually either clinical or laboratory manifestations of the malady.



Fig. 43.—Folliclis. Typical lesion in a young child. (Collection of Dr. L. W. Ketron.)

Prognosis.—The prognosis as regards life depends entirely upon the stage of the primary tuberculous affection, and this is often extremely mild. The local lesions heal spontaneously in the course of a few weeks or months.

Treatment.—These little lesions may be treated locally by being thoroughly swabbed out with the tincture of iodine. However, the constitutional treatment is the essential thing.

TUBERCULOSIS OF SKIN IN NEGROES.

As is well known pulmonary tuberculosis has made great inroads upon the American negro. Glandular and joint tuberculosis are even more frequent than among the same class of whites. It is there-

fore rather surprising to find that tuberculosis of the skin is no more common among the blacks than among the whites. Upon this point both Fox and I are in absolute accord. Neither do we believe that tuberculosis is any more severe. There seems to be but one difference, and that simply the fact that in the colored the disease is rather more prominent, due to the loss of pigment, the healed lesions often appearing as leukodermatous areas.

LEPROSY.⁴⁸

Synonyms.—*Lepra*; *Elephantiasis græcorum*; Hansen's disease; *Lepra arabum*; *Leontiasis*; *Satyriasis*.

Definition.—A chronic infectious disease caused by the *Bacillus lepræ*, and characterized by the presence of nodules in the skin and mucous membranes (tubercular leprosy) or by nerve lesions (anæsthetic leprosy).

Occurrence.—In the United States there are probably at present only a few hundred lepers, most of whom are segregated, but in the Philippines, in the West India Islands and in Central America, as well as in Iceland, Norway and Sweden, parts of Russia and of Spain and Portugal, in the Sandwich Islands, India, South Africa, Egypt, Australia, China and most of the Pacific islands, the disease is far from rare. It will undoubtedly increase in the United States, due to the return of soldiers and others from many of these places.

Etiology.—The cause of the disease is infection with the *Bacillus lepræ*, which has only recently been cultivated.⁴⁹ We are still somewhat hazy as to how infection takes place, but it would seem that rather prolonged and intimate contact is necessary. It is possible that biting insects may transmit the disease. For a long time Jonathan Hutchinson⁵⁰ has insisted that a fish diet has much to do either with directly giving the disease or with rendering the person susceptible to it, but comparatively few investigators agree with him. It is definitely known that large numbers of tubercle bacilli are given off from leprosy patients, so the disease is probably one of contagion.

Symptoms.—There are usually believed to be three forms, the tubercular, the anæsthetic and the mixed. In all of them the latent period is often very long, from one to ten years on the average. Probably the account of leprosy found in Crocker's⁵¹ book is one of the best, and I have borrowed freely from him.

⁴⁸ An excellent bibliography of leprosy is contained in Stelwagon's book on "Diseases of the Skin."

⁴⁹ Duval and Wellman: *Jour. Cutan. Dis.*, 1912, xxx, 397.

⁵⁰ Hutchinson: "Leprosy and Fish-Eating," London, 1906.

⁵¹ Crocker: *Diseases of the Skin*, 3rd Ed.

Nodular leprosy constitutes over fifty per cent of the Norwegian cases, about twenty per cent of the West Indian cases and not more than ten per cent of the East Indian cases. At least five stages may be recognized. The first of these is the prodroma which attend the infection. At first there is debility with malaise, vertigo, epistaxis, diarrhœa and drowsiness. There may be a chill or simply a mild rigor. Their onset is marked by fever, sometimes as high as 104° , which is usually remittent. These febrile symptoms may set in abruptly even years after the exposure. After they have lasted for



Fig. 44.—An early case of tubercular leprosy. (Collection of Dr. Howard Fox.)

some time the leprosy spots begin to appear, there usually first being noticed œdema of the eyelids, and, at a very slightly later date, erythema upon the face and ears as well as upon the front of the forearms and thighs. These patches may fade and then reappear, always being accompanied by febrile symptoms. Crocker states that in certain other cases there may be a total absence of constitutional symptoms even when the spots come out acutely.

The third stage, that of nodulation, follows close upon one of the macular outbreaks: as the eruption fades numerous small tubercles appear. These are discrete at first, and may remain so, or they may speedily coalesce into plaques. As a general rule nodulation does not develop until at least three months after the onset of the disease. Nodules may appear upon any portion of the body, but are most common on the face and ears, limbs, breasts and genitalia. At times these nodules resolve and leave either scars or stains, but many en-



FIG. 45.—Anæsthetic leprosy. (Collection of Dr. Howard Fox.)

large in size and eventually ulcerate. When the case is fully developed the face becomes leontine, due to the thickening of the skin of the forehead and the consequent increase in the depths of the folds. In some instances there is simply a diffuse infiltration of the skin, nodules appearing at a later date. From time to time fresh attacks occur, and after each attack a fresh crop of nodules appear. Anæsthesia may or may not be present in the nodules, or may be partial.

In addition to the cutaneous manifestations there are various

others: ulceration of the mucous membrane of the nose usually occurs, the sexual power is lost; nodules appear in the larynx so that the voice croaks, and there may be various eye troubles.

Anæsthetic leprosy is the commonest tropical form: three stages may be recognized, that of development, that of spreading, that of permanency. The first lasts from one to two years, and includes the prodromata, the eruption, and the beginning of atrophy. During the prodromata the febrile manifestations are absent, but there is chilliness, malaise and gastric discomfort. The most characteristic symptoms are the sharp, shooting pains which traverse certain nerves. Bullæ on the parts of the skin supplied by these nerves may appear.

Usually in about a year the special eruption appears, generally on the trunk and extensor surfaces of the limbs, and on the face, and usually localized to the distribution of a cutaneous nerve. The macules come out singly as a rule, are from one to two inches in diameter, sharply defined, and are yellowish in color. Sweat secretion is absent from them, and there may be changes in sensation. The patches spread peripherally, clearing in the center, although the skin is left more or less atrophic. The border is about one-quarter of an inch in breadth, is distinctly raised, and is yellowish-brown in color. Anæsthesia is nearly always present in the atrophic areas. In addition to the eruption it may be noted that bullæ develop upon the extremities, a perforating ulcer of the foot may result; there may be contracture of the fingers or toes, and the affected nerves are distinctly thickened. Paralysis is usually a late symptom and produces flexion of the second and third phalangeal joints, the first remaining straight. The carpal bones may be destroyed at a later date. Ulcerations are common, and may be deep.

Mixed leprosy is the least common form. As a general rule, the anæsthetic symptoms take the lead for the first few months, then comes fever with the outbreak of leprous spots, and then the nodules develop.

Pathology.—A leprous nodule belongs to the group of infectious granulomata, so well represented by tuberculosis. The nodule is composed of a large number of bacilli, lymphocytes, plasma and mast cells, and more or less characteristic large flat giant cells. The epidermis is not involved, and contains no parasites. The lepra nodules occur in the upper portion of the corium. It is still a question whether or not the bacilli lie within or without the lepra cells, there being good observers upon each side. The bacilli are acid fast, and the tissue may be stained with carbolfuchsin and decolorized with acids, the bacilli still appearing as red rods.

In the anæsthetic variety the lesions are in the nerves. Leprous

new-growths are actually found in the cutaneous nerves, those most often affected being the ulnar, median, radial, musculo-cutaneous, intercostal, humeral and peroneal.

Diagnosis.—It is comparatively easy to recognize a well developed case of leprosy. In the nodular type emphasis may be laid upon the nodules, the finding of the bacilli in the nodules, the thickened nerves, possibly the anæsthesia and the history of exposure. In the anæsthetic cases the loss of sensibility in the cutaneous lesions is almost diagnostic: in addition the possible finding of bacilli in these lesions, and the presence of thickened nerves is characteristic. In all cases acid fast bacilli can usually be demonstrated in the nasal secretions.

In the early cases, however, diagnosis, may be very difficult and



Fig. 46.—Lepra bacilli in various epithelial cells. The large "cell" without a nucleus is a "lepra cell."

the history of exposure and the febrile attacks have considerable weight. The finding of the causal organisms is the only infallible means of diagnosis. The nodular variety must be differentiated from mycosis fungoides and tubercular syphilis. In the former the microscopic picture should serve to clear the field, while in the latter the various laboratory tests must be resorted to. It is worth mentioning that in many cases of leprosy the Wassermann reaction has been found positive. In the anæsthetic type both leukoderma and syringomyelia must be excluded. In the former there is no disturbance of sensation, while in the latter the bacilli are lacking.

Prognosis.—The prognosis is always bad: the vast majority of patients die, either from the leprosy or from some intercurrent infection or affliction. In exceptional instances patients may recover, or at least the disease may become quiescent. Patients may live as

long as twenty years. The anæsthetic type seems to offer the best chance for arrest.

Treatment.—Of the many drugs recommended only two have stood the test of time, namely, chaulmoogra oil and gurjun oil from *Dipterocarpus lævis*. The former is the better. Both are given in capsules, beginning with small doses, which are increased as much as possible. The oils may also be rubbed in externally. The chaulmoogra oil is usually begun in the dosage of three minims three times a day after meals, and at times may be increased to a dram or more three times a day: it is very apt to upset the digestion, and must be handled carefully on this account. Injections of various forms of mercury may at times give good results. Good hygiene should be enforced. The question of the proper care of our lepers is a burning one, as the articles of White,⁵² Dyer,⁵³ Engman and others show. There is no doubt but that lepers should be segregated, and the general opinion seems to be that there should be one central government institution where all of these unfortunates could be sent. In the case of the well-to-do, segregation could probably be carried on in the home.

Leprosy in the Negroes.—Crocker has an excellent discussion of the forms that lepra may take in the colored. He says: "In the dark races the 'leprous spot' is a bright red, the sweatings are accompanied with oiliness, and the skin is always very greasy, with dilated sebaceous openings. The nodules at first are translucent and quite solid, but eventually get blacker even than the black skin they are on; this is true also of the involution erythematous exanthem. The surface is very scaly, sometimes so much so as to mask the disease. In advanced cases Hillis describes a peculiar mottling, like a richly grained wood, on the belly, and mapping out the spinal cord behind." With reference to the anæsthetic type, he says: "In negroes the eruption is of a bright yellow, and is much more conspicuous from the contrast with the dark skin; the vesicles that border the edge of the eruption in the spreading-stage are also more distinct, and when the eruption has traversed a large extent of surface the atrophy of the pigmented part of the skin is much more striking than in the fair races."

RHINOSCLEROMA.

Synonym.—Gleoscleroma.

Definition.—A chronic affection of the anterior nares, caused by the *Bacillus rhinoscleromatis*.

⁵² White: *Jour. Cutan. Dis.*, Nov., 1913, xxxi.

⁵³ Dyer: *Jour. Amer. Med. Assn.*, 1914, lxiii, 298.

Occurrence.—Very rare.

Etiology.—The direct cause of the disease is infection with the *Bacillus rhinoscleromatis*. The affection is most common in Austria and Russia, and is also found in Central America and Brazil. It is usually observed in those between the ages of fifteen and forty.

Symptomatology.—This malady starts in the mucous membrane of the nose, and gradually extends to the cartilage and skin. The shape of the nose becomes gradually altered, becoming broader and flatter, and it feels hard and rigid to the touch. The cutaneous growths are flat, sharply defined nodules, hard and elastic, and painful to pressure. The skin is bound down to them. They rarely ulcerate. The disease is very chronic.

Pathology.—The nodules are *granulomata*, somewhat analogous to leprous nodules.

Prognosis.—The prognosis is unfavorable.

Diagnosis.—Cancer should not be confused with rhinoscleroma: the diagnosis should not be difficult. Nor should rhinoscleroma be confused with the Brazilian boubas as is done in some text books.

Treatment.—Recently Alderson⁵⁴ has reported encouraging results with an autogenous bacterin, and Pollitzer⁵⁵ with the X-ray. Where there is much nasal stenosis the cauterization should be used.

KERATOSIS BLENORRHAGICA.

Synonyms.—Keratosi blenorrhoica; Keratoderma blenorrhoica; Gonorrhoeal keratosis.

Definition.—Keratosis of the skin due to gonorrhoeal infection.

Occurrence.—Very rare.

Etiology.—Definitely associated with a systemic gonorrhoeal infection, and probably with a local infection of the skin.

Symptomatology.—Two different varieties may be observed: in one there is a localized hyperkeratosis on the palms and soles; in the other the eruption is more or less generalized, but is usually more profuse upon the limbs. In both forms there are discrete horny crusts, usually with an inflammatory border.

Pathology.—There is an infiltration of the corium and rete with polymorphonuclear leucocytes and mast cells, and also both parakeratosis as well as hyperkeratosis.

Diagnosis.—Other varieties of keratosis must be excluded.

Treatment.—Spontaneous recovery usually takes place as the

⁵⁴ Alderson: Jour. Cutan. Dis., 1914, xxxii, 308.

⁵⁵ Pollitzer: Jour. Cutan. Dis., 1910, xxvii, 388.

symptoms of the gonorrhœal infection subside. Simpson⁵⁶ found that a sulphur and resorcin ointment was of much benefit.

ERYTHEMA NODOSUM.

Synonym.—Dermatitis contusiformis.

Definition.—An acute inflammatory disease of the skin, caused by a specific microorganism, and characterized by subcutaneous nodules or nodes.

Occurrence.—The disease is rather unusual, constituting only about one case out of each thousand in dermatological practice.

Etiology.—The cause of erythema nodosum has been a bone of contention for a long time, but Rosenow of Chicago has apparently solved the question, for his demonstrations before the American Dermatological Association in 1914, convinced practically all members that the disease is a specific bacterial infection. Whether the infection is purely local or is part of a general infection is not as yet so clear to my mind.

Symptomatology.—The disease is comparatively rare in those past thirty years of age. It is much more common in females than in males. It may affect either the healthy or the debilitated. The disease is usually ushered in by malaise and a more or less acute febrile attack. There may be sore throat, arthritic and abdominal pains and sometimes a mild nephritis. The eruption may appear at the same time that the general symptoms do, or it may be delayed a few hours, or even a couple of days. The skin manifestations are most common upon the tibial aspects of the legs, may also occur upon other portions of the body, especially the arms. They begin as deep seated nodules that speedily grow in size, and become elevated above the surface of the skin. They vary in size from one-half to three inches in diameter, are bright red in color, often with a purplish tinge such as is seen in erysipelas, are sharply circumscribed, and very tender, occasionally painful. At first they are solid, but later may fluctuate, but necrosis practically never occurs, the lesions absorbing spontaneously. There may be accompanying macular or papular inflammatory lesions, which are usually diagnosed as erythema multiforme, although this is disputed by many good observers. The constitutional symptoms usually begin to diminish by the end of the third day, and to disappear by the end of a week. The skin lesions rarely last more than a month, although several new lesions may come out, after the first crop has appeared.

Pathology.—The epidermis is usually normal, the chief seat of

⁵⁶ Simpson: Jour. Amer. Med. Assn., Aug. 24, 1912, 607.

trouble being in the corium, where there is plenty of evidence of an acute inflammatory process. The blood vessels and lymphatics are much dilated, and according to Unna the former may be so closely packed with polymorphonuclear leucocytes that the process resembles a white thrombus. The cellular infiltration is chiefly perivascular in



Fig. 47.—Erythema nodosum of a few days' standing. (Collection of Drs. Fordyce and MacKee.)

character and consists of leucocytes and spindle (fixed tissue) cells, but no true plasma cells. There is, however, considerable œdema of the cutis, although very little cellular infiltration in it.

Diagnosis.—The acute inflammatory character of the eruption, its almost symmetrical distribution upon the anterior aspects of the

legs, and the associated febrile attack, often accompanied by arthritic pæins, usually make the diagnosis easy. The only maladies that might confuse are syphilis, abscesses and erythema induratum. In syphilis the gummata are rarely so symmetrical, and they tend to break down at an early date: in addition they are not heralded in by an acute onset. Boils are not so numerous or so symmetrical and are much more painful: they soon point. Erythema induratum is much more chronic, and is usually upon the back of the legs.

Prognosis.—The prognosis is favorable: however, in a very few instances death has been reported. Recovery may be looked for in from three weeks to two months.

Treatment.—The disease, like many other infections, appears to be a distinctly self-limited one. At the onset the patient should be kept quiet, the bowels opened, and plenty of water given. The diet should be light. In case of severe articular pain aspirin or the salicylates might be employed. If the lesions are very tender, they may require artificial protection, felt or cotton being used around the edges, so as to absorb trauma.

DERMATITIS GANGRÆNOSA.

Synonyms.—Dermatitis gangrænosa infantum; Varicella gangrænosa; Pemphigus gangrænosa; Multiple cachectic gangrene; Infantile gangrenous ecthyma; Multiple disseminated gangrene of the skin in infants; Rupia escharotica.

Definition.—Disseminated areas of gangrene, arising spontaneously or following a vesicular or pustular eruption.

Occurrence.—Usually considered to be very rare.

Etiology.—A large number of bacteria have been described by various authors: those most favored are the staphylococcus, the *Bacillus pyocyaneus* and diphtheria bacilli. The disease is most apt to follow varicella in children. I have seen two cases in adults, one in a healthy man where the lesions followed simple folliculitis, and one in a patient in the last stages of chronic nephritis. In both instances only staphylococci were found in the lesions.

Symptomatology.—As already indicated most of the cases follow chicken-pox, but some follow other infections. The vesicles or pustules, instead of drying up, become covered by a central crust, of a black, gray or green color, beneath which there is suppuration, and around which there is a wide inflammatory areola. Ulceration takes place beneath the crust and spreads peripherally, and the resulting ulcer varies in size from one centimeter to many inches in diameter. It may be deep or shallow, and is usually irregular in shape. The

lesions may be painless, or there may be severe pain. In some instances there is very severe systemic disturbance.

Diagnosis.—The diagnosis is very easy: syphilis should be excluded.

Prognosis.—In the cachectic, or in very young children with many lesions the prognosis is unfavorable, but the majority of the cases recover.

Treatment.—Undoubtedly the use of the actual cautery would be the most effectual means of stopping the spread of the ulceration. In the case of very painful lesions orthoform should be used. Anti-septic ointments are usually employed.

CHAPTER XI.

DISEASES DUE TO EXTERNAL INFECTION WITH VEGETABLE PARASITES OTHER THAN BACTERIA.

The investigation of the various diseases caused by fungi is still in its infancy, and doubtless many pathogenic organisms will later be described. Chipman¹ has recently written an excellent article that gives a broad survey of the subject, together with a bibliography. He well points out that the action of the fungi is similar to that of the bacteria, that is, by means of toxins: there are serological reactions comparable to those for infectious diseases, and the processes of immunity are the same. However, his botanical classification is rather old, for as pointed out by Strasburger, Noll, Schenck and Schimper² these parasites belong to the Thallophytes. The Thallophytes, it will be remembered, are low orders of plants that show no segmentation into root, stem and leaves. They are divided into thirteen classes, one of which, the Hyphomycetes, includes all members of this group. The Hyphomycetes are in turn subdivided into three main groups, the Phycomycetes (Comycetes), the Ascomycetes, which fruit by asci, and the Basidiomycetes, which form basidia, the sexual organs being absent. The majority of the diseases about to be described are caused by organisms coming under the last head.

PINTA.

Synonyms.—Pinta disease; Caraate; Tina; Spotted sickness.

Definition.—Pinta is a contagious disease of the skin, due to a variety of aspergillus, and characterized by scaly spots of various colors.

Occurrence.—The disease occurs chiefly in Mexico and South America.

Etiology.—It is due to several varieties of fungi, of the class aspergillus, each of which has a distinct color. The fungus normally grows on cereals and stagnant mine waters, and the skin may become infected from direct contact, or through contact with a carrier, such as the mosquito.

Symptomatology.—Barbe³ and Sandwith⁴ both give excellent ac-

¹ Chipman: Jour. Amer. Med. Assn., 1913, lxi, 467.

² Strasburger, Noll, Schenck and Schimper: A Textbook of Botany, London, 1903.

³ Barbe: La pratique Dermatologie, 1900, i.

⁴ Sandwith: Brit. Med. Jour., 1905, ii, 479, 1270.

counts of this malady. The exposed surfaces, such as the face and hands, are first attacked, but no part of the body is exempt. The lesions in their general character closely resemble those of *tinea versicolor*, that is they are at first discrete macules, covered with fine branny scales, the lesions later becoming confluent. However, the color is different from that of *tinea versicolor*, for in *pinta* the lesions may be black, grey, or bluish-red. The malady is persistent and often leaves behind it atrophic white spots.

Pathology.—The whole rete is riddled by the fungus, and it may become markedly atrophied. The pigment cells may entirely disappear.

Treatment.—The patches may be painted with the tincture of iodine, or an ammoniated mercury ointment used, there being one dram of the mercurial to an ounce of base.

MADURA FOOT.

Synonyms.—Mycetoma; Fungus foot of India.

Definition.—An infectious disease caused by fungi, and characterized by the formation of deep nodes that soon break down.

Occurrence.—The disease is fairly common in India, but a few cases have been encountered in America, Sutton's⁵ report being the latest.

Etiology.—Three different organisms have been described, a streptothrix closely related to the ray fungus of actinomycosis, a form of *mucedo*, and lastly an *aspergillus*. The disease is usually encountered in those who go barefooted in the rural districts, and a break in the skin seems to be necessary for the organism to gain entrance.

Symptomatology.—The foot is the site of predilection, but at times the hand is attacked. At first there is some œdema of the skin with a few peripheral cutaneous nodules; later deep nodules develop. They break down with sinus formation, the discharge from which contains either yellow, black or red granules, the yellow being much the commonest in this country.

Pathology.—Sutton found that the prickle layer was thickened and that there were wide spaces between the cells, which spaces contained granules of the organism and also polynuclears and small round cells. The grains or 'druses' were irregularly scattered through the corium in the neighborhood of the sinus. Under the low power, these bodies appeared as rounded, oyster-like masses, the central and pericentral portions of which stained fairly well with hæmoxlyn, and

⁵ Sutton: Jour. Amer. Med. Assn., 1913, ix, 1339.

the outer zone of which reacted to eosin only. Histologically, the bodies consisted of a central, granular-appearing portion, with radiating mycelial threads which extended almost to the periphery, the entire mass being encompassed in a glossy hyaline shell. The separate filaments stained so faintly that it was not possible to ascertain, with any degree of accuracy, whether or not branching or segmentation was present. The tissue changes in the immediate vicinity of the druses were such as one might expect to find in a chronic inflammatory process of this nature—vascular generation and dilatation, the latter often accompanied by endothelial proliferation, with connective tissue and epithelioid infiltration of the vessel walls, and collections of plasma and epithelioid cells in the cutis, together with occasional giant cells.”

Diagnosis.—The disease might be confused with actinomycosis, or possibly even with sarcoma, as actually occurred in one case that I saw. Examination of the contents should serve to clear up the diagnosis.

Treatment.—Amputation is probably the only effective form of treatment. Other suggestions have been the X-ray, potassium iodide or copper sulphate internally, and the application of iodine to the sinuses.

ACTINOMYCOSIS.

Definition.—A chronic, infectious, inflammatory condition due to the ray fungus and characterized by chronic nodules which tend to break down.

Occurrence.—The disease is very common in cattle, where it is known as “lumpy jaw.” In man it usually affects the jaw but may primarily involve the skin, although this is very rare.

Etiology.—The disease is due to infection with the ray fungus. Infection practically always takes place through the buccal cavity, either through the tonsils, or more frequently through decayed teeth. The organism is supposed to live upon straw and grain, and the habit of carrying a straw in the mouth is believed to be responsible for the infection in many instances.

The ray fungus, called actinomyces, consists of a radiating network of more or less interwoven mycelium, the ends of which terminate in bulbous expansions, these growths probably representing the fructifying bodies.

Symptomatology.—Men who work in the fields or around cattle are usually affected. The disease is most common around the jaw, not starting in the skin. The first symptom is a hard, subcutaneous nodule, which eventually suppurates, and in the pus may be found

minute yellowish granules that represent agglomerations of the actinomyces. Usually there develop a number of nodes, and a corresponding number of sinuses. Occasionally the skin is primarily affected, but this is very rare.

Diagnosis.—This disease must be differentiated from malignant tumors, syphilis, tuberculosis, and mycetoma, and this is done entirely by laboratory means, the finding of the causative organism being the only sure proof that the disease is actinomycosis.

Prognosis.—The prognosis must always be guarded, for generalized infection often seems to take place. Infection of superficial nature is usually not especially serious.

Treatment.—Potassium iodide should be given internally in good-sized doses, and the local injection of the same remedy may also be useful, about a one per cent solution being used. The other treatment is purely surgical, the lesion being either excised or opened and cauterized. Many operations are often necessary in order to effect a cure.

THRUSH.

Thrush is the term employed for a fungous disease affecting the tongue and buccal cavity of children who are nursing, and is characterized by a white, persistent growth, which gives no clinical symptoms. It is usually stated that it is caused by the *Oidium albicans*, but de Beurmann, Gougerot and Vaucher⁶ state that the organism is not an oidium, but belongs to the endomycetes. Bathing the affected parts with bicarbonate of soda or with borax will usually affect a cure in a short space of time.

SPOROTRICHOSIS.⁷

Definition.—A chronic infectious disease due to the sporotrichium, and manifested by gummatous lesions along the lymphatics.

Occurrence.—The disease is undoubtedly very rare, but more and more cases are being reported each year, chiefly from the middle-western part of the United States. The disease occurs in horses as well as man.

Etiology.—The disease is due to infection with a sporotrichium, of which there are probably three varieties: *Sporotrichium Beurmanni* in the European and Brazilian cases, *Sporotrichium indicum* in the Ceylon cases, and *Sporotrichium Schencki* in the

⁶ De Beurmann, Gougerot and Vaucher: *Rev. de med.*, Dec., 1910.

⁷ Schenck: *Bull. Johns Hopkins Hosp.*, 1898, 286. De Beurmann and Gougerot, *Les Sporotrichoses*, Paris, 1912. Chipman, *Jour. Cutan. Dis.*, 1912, xxx, 339. Hyde and Davis, *Jour. Cutan. Dis.*, 1910, xxviii, 321. Sutton, *Jour. Amer. Med. Assn.*, 1910, lv, 1000, 2213.

North American cases. Films taken from the cultures or lesions show long filaments about two microns in breadth, and numerous ovoid spores, which are about three by five microns, or a little smaller than a red blood cell. Bunches of these spores may at times be found attached to a pedicle.

Symptomatology.—There are two different types that are rather well defined. In the common type there may or not be recognizable primary lesions or portal of entry upon the skin, usually upon the hand. There develops a series of nodules along the lymphatic chain, the lymph vessel itself is hard and may be felt. These nodules either remain quiescent or break down with the formation of open ulcers. These ulcers may become markedly verrucose in the course of time. In some few cases, chiefly the French, the lesions develop primarily



Fig. 48.—Sporotrichosis. A typical case of ten weeks' standing. (Collection of Dr. Richard L. Sutton.)

in the dermis, and there is a ring of small vesicles around a sinus that leads down to a small nodule. Mucous membranes are occasionally affected.

Pathology.—The disease is similar to tuberculosis or syphilis; it is an infectious granuloma. There may be any one of three different types of inflammatory reaction, the suppurative with many polymorphous cells, the small round cell type, and lastly, the epithelioid cell, together with giant cells.

Diagnosis.—The disease is most apt to be confused with syphilis, with chronic glanders of the lymphatic type and with infections with ordinary pyogenic organisms, chiefly the streptococcus. A certain diagnosis can be made only by the laboratory.

Treatment.—Potassium iodide should be given internally, and possibly injected into the wounds. In cases where there are large abscesses these should be treated surgically.

BLASTOMYCOSIS.

Synonyms.—Blastomycetic dermatitis; *Saccharomycosis hominis*.

Definition.—An infectious disease caused by the blastomycetes,

and manifested by patches of verrucose dermatitis, sometimes with involvement of the internal organs.

Occurrence.—The disease is not common, but a goodly number of cases have been reported from the neighborhood of Chicago, and I have at least a dozen cases that originated either around Baltimore or in the South. The disease is undoubtedly much commoner than has been usually believed.

Etiology.—The disease is caused by peculiar budding organisms which superficially resemble yeast cells. The organisms as found in the tissues are round, doubly contoured and vary in diameter from 10 to 13 microns. In cultures they show mycelium. Endogenous spores may be formed. Those infected are usually men who have worked in the open fields, but the method of inoculation is as yet



Fig. 49.—Blastomycotic lesion of six months' standing.

unknown. Gilchrist* deserves special credit for bringing this organism to the attention of the American profession, he having described the first American case.

Symptomatology.—As already indicated, men who have led an out-of-door life are the ones usually affected. At the onset it should be pointed out that the cases described from California under the name "*Dermatitis coccidioides*" are probably different. The cases described by various German and Brazilian writers are probably the same.

The disease begins as a small papule, which, in the course of several weeks, becomes about one centimeter in diameter, and which shows some exudation and crusting. If the crust be removed it can be

* Gilchrist: Johns Hopkins Hospital Reports, 1896, i, 269.

noted that the surface is distinctly verrucose or papillomatous, and that some pus exudes from between the projections. The border of the patch is well-defined, raised, and has a deep purplish-red color. The patch spreads peripherally, either by spread of the original lesion, or by the development of new lesions just beyond the margin, or in both manners. The patches may eventually become very large, even ten or more inches in diameter, and they may protrude to a considerable extent beyond the normal level of the skin. Spontaneous healing may take place in the center, and at times the whole process seems to have cleared up spontaneously. Foci of disease may appear upon the skin at some considerable distance, although this is not usual. In rare instances the disease may become generalized, and the patient



Fig. 50.—Blastomycosis. (Collection of Dr. I. R. Pels.)

die from symptoms resembling a miliary or a very rapid pulmonary tuberculosis. In at least one case the excision of a piece for diagnosis seems to have been responsible for this dissemination.

Pathology.—The epidermis is usually much increased in depth, there being marked prolongations extending well down into the corium. When snared off these may resemble cancer, except that the normal relationship of prickle and basal cells is usually undisturbed. Between these downgrowths of epidermis there are small abscesses, or pockets filled with polymorphonuclears and often containing many blastomycetes. The upper part of the corium is rather uniformly infiltrated by various types of cell, especially polynuclears, plasma cells, small round cells and fixed tissue cells, and giant cells may often

be seen. The blood vessels are dilated. The subcutaneous fat is unchanged.

Diagnosis.—This disease may markedly resemble tuberculosis verrucosa cutis, syphilis, bromide eruption and sporotrichosis. Tuberculosis is more apt to affect younger persons, and sections do not usually show the collections of polynuclears that are so characteristic of blastomycosis. Nor can the causative organism, the double contoured body, be formed in tuberculosis. Syphilis rarely assumes such

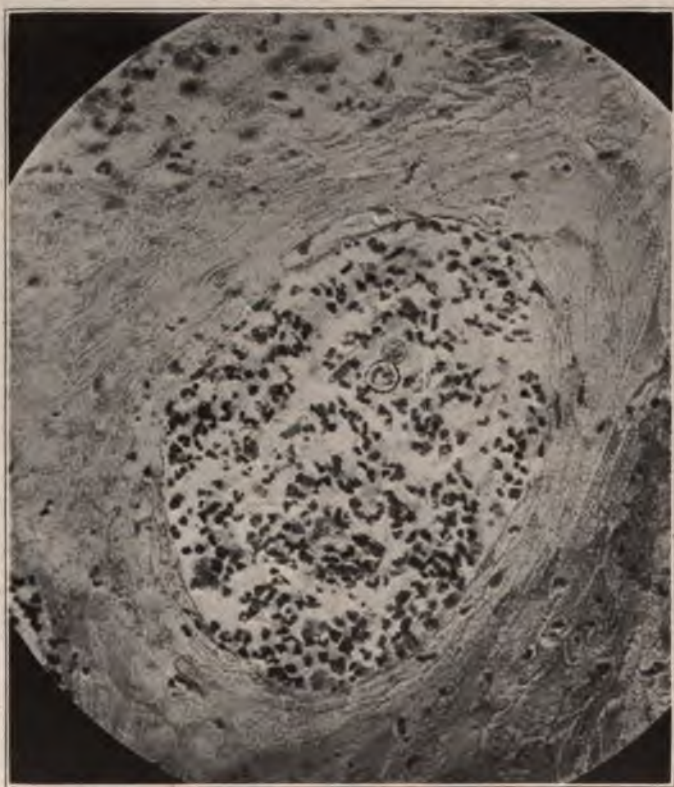


Fig. 51.—Blastomyces in a miliary abscess in the skin. (Collection of Dr. Gilchrist.)

a vegetating form, there are usually other signs of the infection, and the Wassermann is often positive. An injection of salvarsan will speedily improve syphilis in the majority of cases, but will not influence blastomycosis. In a bromide eruption there is the history of drug-taking, no organisms can be found, and the lesions heal spontaneously when the drug is stopped. The lesions of sporotrichosis usually definitely follow the lymphatics. The diagnosis from dermatitis coecidioides will be discussed under that subject.

In order to find the causative organisms pus should be squeezed out upon a glass slide, a drop of liquor potassii added and a cover slip be put on. At the expiration of one or two minutes the slide should be searched with a high-power lens, although the organism can often be found under the low power.

Prognosis.—The disease is very chronic, but can usually be cured. In the generalized cases death nearly always ensues.

Treatment.—Large internal doses of the iodides should be employed. The patches may be treated externally with potassium permanganate or potassium iodide. The X-ray may do much good. Very chronic patches should be excised, or thoroughly cauterized with the actual cautery.

DERMATITIS COCCIDIOIDES.

Synonym.—Granuloma coccidioides.

Definition.—An infectious disease due to a fungus, and characterized by a tendency towards general dissemination and a rather acute course.

Occurrence.—This disease seems to be confined to California, where it is not especially uncommon.

Etiology.—The same type of individuals are affected as in blastomycosis, that is, those who have led an out-of-door life. The organism that causes the disease is undoubtedly very closely related to the blastomyces, but Ophüls⁹ considers that there are certain differences, a point by no means universally conceded. He points out that the organism of dermatitis coccidioides is larger, that it multiplies by endogenous sporulation and that there is no budding, and lastly that on culture media there are certain differences.

Symptomatology.—The cutaneous lesions resemble those of blastomycosis, but there is a marked tendency for the lymph glands to become involved; the disease tends very strongly towards becoming generalized, much more so than in the case of blastomycosis. Practically all of the California dermatologists, including Montgomery and Morrow,¹⁰ as well as Chipman,¹¹ feel very strongly that the two diseases are different, although the Eastern men do not generally concede the point.

Pathology.—Hektoen¹² claims that the nodules bear a closer resemblance to the tubercle than do the lesions of blastomycosis.

⁹ Ophüls: Jour. Amer. Med. Assn., Oct. 28, 1905, 1291.

¹⁰ Montgomery and Morrow: Jour. Cutan. Dis., 1904, xxii, 368.

¹¹ Chipman: Jour. Amer. Med. Assn., 1913, lxi, 407.

¹² Hektoen: Jour. Amer. Med. Assn., Sept. 28, 1907, 1071.

Prognosis.—The outlook is apparently rather serious, many of the lesions being secondary to a primary generalized infection.

Treatment.—Large doses of potassium iodide internally, and the antiseptics or the X-ray externally should be employed.

THE RINGWORMS.

Of late years the classic investigations of Sabouraud of Paris, so well portrayed in his great work, “*Les Teignes*,” has totally revolutionized our biologic knowledge concerning this type of infection. Unfortunately this work has not been extensively carried on in America. However, fairly good accounts may be found in Jackson and McMurtry’s book on “*Diseases of the Hair*” and in Sequeira’s “*Diseases of the Skin*.”

The ringworm parasites may be divided into five groups, the *microsporon*s, the *endothrix trichophyton*s, the *ectothrix trichophyton*s, the *achorions* and the *epidermophyton*s.

The **microsporon**s have four species of special interest to us, first the *Microsporon audouini*, which is peculiar to the human race, and which causes the greatest number of cases of ringworm of the scalp. It does not attack those persons who have passed the age of puberty. Only very rarely does it effect the skin, but it may exceptionally do so. Upon examining a hair infected with this organism it will be noticed that the spores are small and closely packed together and that the mycelium is scanty and is in the form of short rods.

The *Microsporon lanosum* is of animal origin, and while it usually attacks the scalp, may also affect the skin or beard. Family epidemics are usually caused by this organism, while school epidemics are caused by the previous parasite.

The *Microsporon furfur* causes the lesions of *tinea versicolor*.

The *Microsporon minutissimum* causes *erythrasma*.

The **Endothrix trichophyton**s are large spored ringworms that are peculiar to man: they may affect the scalp, body, beard and nails. When they affect the scalp they are found within the hairs, and the spores are arranged in chains; the mycelium is rod-like. There are four important varieties.

The *Trichophyton crateriforme* forms the “disseminated ringworm” of Aldersmith, the lesions being numerous, small in size and scattered over the entire scalp. The whole hair may be filled with the spores and mycelium. This type may also form dry, scaly patches on the skin.

The *Trichophyton acuminatum* may affect the scalp, beard or skin. It renders the hairs very brittle, so that they break off within the fol-

liele mouth. The spores are not arranged in as definite rows as in the other varieties of *Endothrix trichophyton*, but resemble "nuts in a bag." The lesions are small and widely disseminated; the skin is free from scales and contains innumerable black dots, the "black-dot" ringworm.

The *Trichophyton violaceum* may affect the hair, skin, beard or nails. The lesions vary greatly in size, but there are usually black dots present.

The *Trichophyton cerebriforme* belongs to the neo-endothrix group, the so-called endo-ectothrix, for the mycelium may be found both on the inside and outside of certain hairs during the period of invasion. The beard is most frequently affected by this fungus, but the scalp and skin may also suffer.

The **Ectothrix trichophyton**s are so-called because the mycelium and spores remain chiefly on the outside of the affected hairs. They are of animal origin, and produce lesions of marked inflammatory violence, this reaction causing the hairs to fall out and thus cure the disease in a short time. The hairs are not rendered brittle and do not break off. Epidemics of this type are very rare. These parasites are divided into two classes, the small-spored and the large-spored varieties.

The *Trichophyton asteroides* is an example of the small-spored Ectothrix trichophyton. The lesions produced by it are always few in number and may be solitary; they occur upon the hands or wrists of adults, rarely in the beard and in the scalps of children. They frequently go on to kerion formation. The infection is usually derived from horses or cattle.

The *Trichophyton rosaceum* is an example of a large-spored ectothrix. The scalp is rarely affected, but the beard is more apt to suffer, while the glabrous skin is only exceptionally involved. The beard lesions are absolutely characteristic, for each hair occupies the summit of a little cone, the lesions being disseminated.

The *Trichophyton ochraceum* is another large-spored ectothrix, which is derived from cattle. The infection usually occurs upon the skin, and is very severe, the lesions being vesicular and often becoming kerionic.

The organism causing *tinea imbricata* is probably an ectothrix.

The **achorions** produce favus. In human beings the disease is usually caused by the *Achorion Schöleinii*, but there are four other species which produce favus in animals, and which may do so in the human being. These species are:

1. *Achorion gallinae*.
2. *Oöspora canina* of Sabrazes-Constantin.

3. Achorion Quinckeanum of the mouse.
4. Achorion gypseum of Bodin.

A good account of these organisms may be obtained from Jackson and McMurtry's book on "Diseases of the Hair."

The Epidermophyton.—The *Epidermophyton inguinale*, the cause of tinea cruris, the old "eczema marginatum" of Hebra, was at first believed to be a trichophyton, but subsequent work has proven this to be incorrect and that the organism is really an epidermophyton. Certain cases of acute eczema of the hands and feet are caused by this organism.

The following table, modified from Sabouraud, will show the various types of infection caused by these different organisms:

Organism.	Scalp.	Beard.	Glabrous skin.	Nails.	Total.
<i>Microsporon audouinii</i>	132	0	0	0	132
<i>Microsporon lanosum</i>	12	1	2	0	15
<i>Trichophyton crateriforme</i>	112	0	3	0	115
<i>Trichophyton acuminatum</i>	47	1	4	0	52
<i>Trichophyton violaceum</i> ..	33	2	1	1	37
<i>Trichophyton cerebriiforme</i>	5	7	1	0	13
<i>Trichophyton asteroides</i> ..	5	0	10	0	15
<i>Trichophyton resaceum</i> ...	0	5	0	0	5
<i>Trichophyton ochraceum</i> ..	1	1	5	0	7

These figures are given for Paris and do not hold for all other parts of the world, but as such statistics have never been prepared for America these French figures seem worth recording here.

In order to examine a scalp for ringworm short, stumpy, broken hairs should be selected. These should be extracted gently, making traction in the direction of the hair growth. In the case of "black-dot" ringworm it may be necessary to use a needle in order to extract the hair. The hairs should be placed upon a slide, a drop or two of 10 per cent solution of potassium hydroxide added and a cover slip placed on top. Then the hairs are examined under the high power of a microscope. In examining cutaneous lesions a few scales should be detached from the edge of the lesions, placed bottom side up on a slide, and the same procedure gone through.

In order to grow these parasites 2 per cent of glucose may be added to the ordinary agar-agar media, but as the cultures do not grow alike upon all media Sabouraud has proposed that a uniform medium be employed. He recommends the following:

R	Water	1000 G.
	Crude maltose (Chanut)	40 G.
	Granulated peptone (Chassaing)	10 G.
	Gelose	18 G.
R	Water	1000 G.
	Glucose (Chanut)	40 G.
	Granulated peptone (Chassaing)	10 G.
	Gelose	18 G.

The hairs or scales should be placed upon a sterilized slide and cut into minute pieces with a sterilized knife. The platinum loop is then passed through the flame, allowed to cool, and dipped into the medium. It is then dipped into the pieces so that they adhere to it, and the medium is then inoculated in the usual way. MacLeod recommends that the hairs or scales be first soaked in alcohol for a few hours in order to rid them of contaminating micro-organisms, but Sabouraud considers this unnecessary. The growths do not become visible for about a week. They should be incubated at about 30° C. (86° F.).

TINEA TONSURANS.

Synonyms.—Tinea tonsdens; Ringworm of scalp; Trichophytosis capitis.

Definition.—A contagious disease of the hairy scalp, due to a ringworm parasite, and characterized by the formation of partly bald, usually scaly areas.

Occurrence.—Ringworm of the scalp is a very common disease among children. Pollitzer states that it constitutes over three per cent of all dermatoses. My figures¹³ show that it is nearly three times as common in blacks as in whites, and Fox¹⁴ also gives a much higher percentage in the same race. The reason for this is not clear. The disease is very rare in those past puberty, only a few instances having been recorded. It is much commoner in dispensary than in private practice.

Etiology.—In America, as in France and England, the vast majority of all cases are caused by the *Microsporon audouini*, but cases are also caused by the *Microsporon lanosum*, and various of the trichophytons. The disease is very contagious; most of the cases seem to be acquired in the schools, but some few cases come from animal inoculation. The disease may be caught in barber shops, from using infected brushes, or from wearing hats belonging to infected children.

¹³ Hazen: Jour. Cutan. Dis., 1914, xxxii, 705.

¹⁴ Fox: Jour. Cutan. Dis., 1908, xxvi, 67.

Symptomatology.—There are a number of different varieties.

The *gray-patch ringworm* is caused by microsporons, usually the *audouini*. The incubation period is about three days. The first symptom is the formation of a small, round erythematous patch upon which there may be a few superficial vesicles. The erythema soon fades, and furfuraceous, grayish scales form the predominating signs. The patch spread peripherally and the hairs begin to fall, or to break off just above the skin surface. Usually there are a number of rather large patches, for the small-spored parasites produce large lesions,



Fig. 52.—Ringworm of the scalp, due to a microsporon.

while the large-spored parasites tend to cause small lesions. Several patches may coalesce into forming one huge area, often nearly as large as the hairy scalp. The amount of scaling is rarely excessive, and no thick crusts are found in uncomplicated cases. Slight itching may be present. The disease is very chronic, but terminates spontaneously at puberty. Small patches may appear upon the adjacent glabrous skin, especially in infections due to the *Microsporon lanosum*. Baldness is not caused by uncomplicated infections.

Disseminated ringworm is usually due to the *Trichophyton crateri-*

forme, but may also be caused by a microspored organism. The entire scalp is usually involved, there being very small, bald spots which have in them groups of hair stumps. The scalp may be fairly healthy-looking, but is usually covered by furfuraceous, or occasionally greasy scales. It takes close observation to recognize this type.

Black-dot ringworm is caused by the *Trichophyton acuminatum*, and presents many small, widely disseminated patches. The surface of these patches is free from scales and shows very numerous black dots, which somewhat resemble blackheads. Each of these is a hair that has broken off in the follicle at a level with the cutaneous surface. Many of the follicles protrude somewhat so as to resemble gooseflesh.



Fig. 53.—Ringworm of the scalp, due to a microsporon infection. Notice the lesions upon the skin of the neck.

Bald ringworm has smooth non-inflammatory patches that resemble those of alopecia areata.

Pustular ringworm may be due to secondary infection with pyogenic cocci, or to primary infection with the ectothrixes and is then called *kerion*. Either the *Trichophyton asteroides*, which has small spores, or the *Trichophyton ochraceum*, which has large spores, is usually responsible. Secondary infection with cocci is not necessary, as Gilchrist and others have well shown. Clinically the condition shows partly bald patches containing hair stumps which surmount boggy, inflammatory swellings that vary in size from one centimeter to four

or five centimeters and which may be single or multiple. The crown of the head is the most common place for them to occur.

Pathology.—The spores and mycelium at first grow just under the horny layer, but as soon as the fungi encounter the follicle mouths the mycelium grows down into it, completely rimming the mouth. The further growth is downward into the depths of the follicle and also, except in the cases of ectothrix infection, into the hair as well. In the microsporon and endothrix infections there is but a slight stage of inflammatory reaction, but in the ectothrix infections this reaction may be very severe. The really important thing to remember is that the depths of the follicles are invaded. The occurrence of the parasites in the hairs has already been described.



Fig. 54.—Drawing of a hair that is infected by a microsporon. Note the massive involvement of the sheath.

Diagnosis.—The diagnosis is usually easy; for the old rule that “bald patches on a child’s head are usually ringworm” applies beautifully. To be excluded are alopecia areata, various types of seborrhoea, favus, psoriasis and eczema. In many of these diseases the only positive way of making a correct diagnosis is by microscopical examination of a broken hair. Favus is rare in America; it has characteristic heaped up yellow crusts, and produces permanent baldness.

Prognosis.—The ultimate prognosis is good, for the disease does not produce baldness and heals spontaneously at puberty, but the

immediate prognosis is bad unless skillful X-ray treatment can be given, for the depth of the infection precludes antiparasitic ointments reaching their goal.

Treatment.—There are two ways of attacking the problem of treatment, one by the persistent use of antiseptic ointments, and the second by the use of the X-rays, which temporarily remove the hairs, thus destroying the food supplies of the invaders.

Many antiseptics have been favored by various writers, some have used iodine, some sulphur, some chrysarobin, some salicylic acid, and some ammoniated mercury. My own favorite prescription is:

R. Acidi salicylici	3 ss	2.
Hydrar. ammon.	3 i	4.
Ung. aq. ros., q.s.	3 i	30.

This should be rubbed into the scalp twice a day, and a night cap should always be worn. I am certain that I have seen a few cases permanently cured by these means, but they are very few as compared to the total number of cases treated, and only those that were under constant supervision.

It is more than possible that if an antiseptic were applied in liquid form, as Lugol's solution, and then driven into the tissues by the positive pole of a galvanic battery the parasites would be directly killed. However this theory has not as yet been proven.

Both Aldersmith¹⁵ and Whitfield¹⁶ advise the use of croton oil, but to the majority of American dermatologists this method seems dangerous, without having the merit of being certain. The portions of the scalp adjacent to the ringworm patch must be protected by a thick layer of some neutral ointment, then the croton oil should be applied by means of the eye of a needle to each follicle. A sufficient quantity of oil must be used to produce a suppurative folliculitis, and the hair is then to be extracted.

Undoubtedly the best treatment for ringworm is the epilation treatment by means of the X-rays. Just a sufficient quantity of the ray should be used to cause temporary, but not permanent, falling of the hair. Contrary to the advice found in the majority of American text books a hard ray should always be employed; it should be at least a No. 7 Benoist. The dose should be five Holzknecht units which equals the tint B of the original Sabouraud radiometer or 10 X-units of Kienböck's scale. An unmeasured dose should never be employed. If there is but one patch, that alone should be treated, but if the disease is extensive the whole head should be rayed. The hair should

¹⁵ Aldersmith: "Ringworm," London, 1898.

¹⁶ Whitfield: "Skin Diseases and their Treatment," London, 1907, 69.

first be cut short. If the whole scalp is to be rayed the method of Kienböck-Adamson¹⁷ may be followed, dividing the scalp into five areas, and giving an exposure to each. Of course the rest of the scalp should always be protected. Fifteen days after exposure the hairs begin to loosen and fall. Three days later the hairs are epilated and the scalp washed in soap and water. After each washing the scalp is anointed with the following:

R	Olei cadini	3 flss	10.
	Hydrar. ox. flav.	3 viiss	30.
	Petrolat.	3 xliss	50.

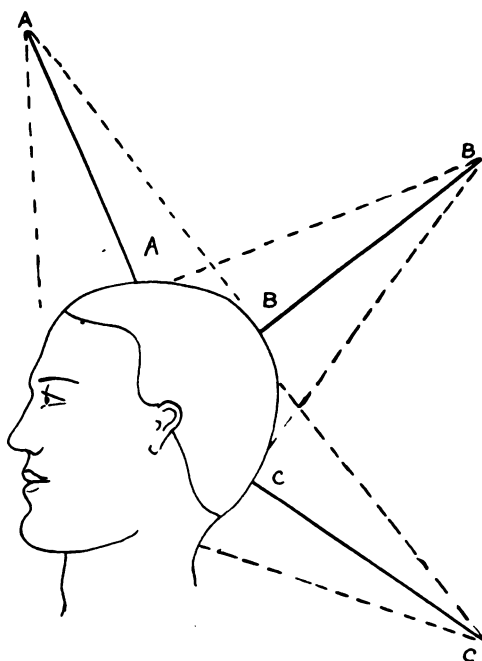


Fig. 55.—Diagram showing how the X-ray is applied so as to cover the entire scalp. In addition to the ones shown, one other exposure is required upon each side. (Kienböck-Adamson method.)

which is left on over night. This is washed off in the morning, and each spot painted with:

R	Tct. iodin.	3 i	4.
	Alcohol	3 x	40.

The epilated areas remain bald for about two months, when fine hair again begins to grow, and restitution is complete in about four months.

¹⁷ Kienböck and Adamson: *Lancet*, May 15, 1909.

The X-ray treatment of tinea tonsurans should never be tried by any one who is not absolutely sure of his technique, for either permanent baldness or a very severe dermatitis may result.

TINEA BARBÆ.

Synonyms.—Ringworm of the beard; Sycosis parasitica; Trichophytosis barbæ; Barber's itch.

Definition.—A contagious disease of the bearded area, caused by a ringworm parasite, and manifesting itself by the follicular and perifollicular inflammation.



Fig. 56.—A typical case of ringworm of the beard. Note the large nodules. (Gilchrist's case.)

Occurrence.—According to the figures of the American Dermatological Association this disease constitutes three-tenths of one per cent of all dermatoses, but these figures seem decidedly high to me, for in my last five thousand cases I have not encountered a single instance of this disease.

Etiology.—These lesions are produced almost entirely by the trichophytions, either the *Trichophyton cerebriforme* or *rosaceum* being

most often responsible. Only men suffer, and chiefly those who frequent barber shops.

Symptomatology.—This type usually starts as a superficial ringworm of the skin, with later invasion of the follicles. The lesions are commonest upon the chin, neck and submaxillary regions. There are usually a varying number of nodules, sometimes very superficial and sometimes quite deep, but always follicular or perifollicular. The size may be small, or a diameter of over a centimeter may be reached. The hair over them is usually stubby, and there is a discharge of thin pus from the follicles. The nodules tend to be arranged in groups, each group more or less separate from all others. There is a considerable amount of general inflammation of the skin, but most marked over the swellings. In certain instances there may be distinct kerion formation. In lesions due to *Tricophyton rosaceum* Jackson and McMurtry state: "On the beard the lesions of the *Tr. rosaceum* are so distinctive that a diagnosis of this fungous species can often be made by simple inspection. Each hair occupies the summit of a little cone, resembling the lesions of *keratosis pilaris*. The cone is dry and with few scales, while the hair is gray, broken off 2 to 3 mm. above the skin and has a sheath. The lesions are small and disseminated."

Pathology.—It is not necessary to say anything about the parasites, as they have already been sufficiently described; however it is worth pointing out that there is usually more mycelia in the beard hairs than in the scalp hairs. The pathology is similar to that of *tinea tonsurans*, except that there is almost constant perifolliculitis, as in the *ectothrix* infections of the scalp.

Diagnosis.—*Eczema* and *sycosis non-parasitica (vulgaris)* must be distinguished. Both affect any portion of the bearded area, and are not so sharply limited as in ringworm. *Eczema* itches, and spreads beyond the bearded area. The microscopical demonstration of the parasite is the most satisfactory way of deciding the question.

Prognosis.—The disease is very chronic. If it ends spontaneously it does so with considerable loss of hair. If treated it is curable and leaves no traces. It is easier to cure than ringworm of the scalp.

Treatment.—Antiseptic ointments must always be employed as in *tinea tonsurans*. Ammoniated mercury is as good as any. The hairs should be epilated, which can usually be done perfectly well by hand. In very stubborn cases the X-ray should be employed, just as upon the scalp.

TINEA CIRCINATA.

Synonyms.—Ringworm of the body; *Trichophytosis corporis*.

Definition.—A contagious disease of the skin, caused by the ring-

worm parasites, and characterized by superficial areas of inflammation.

Occurrence.—The disease is common, as it forms about one per



Fig. 57.—A mild ectothrix infection of the skin (*Tinea circinata*).

cent of all skin diseases. It seems to be slightly commoner in the negro than in the white.

Etiology.—The infecting organism is occasionally a microsporon,



Fig. 58.—*Tinea circinata*, probably due to an ectothrix.

but is usually a trichophyton, the *Tr. asteroides* probably being the commonest. When caused by the ectothrix organisms it is often acquired from animals; cattles, horses, dogs, cats and even birds being

the hosts. In some instances the disease is very contagious, in some instances only mildly so.

Symptomatology.—Five groups of cases may clinically be recognized:

1. Small, scaly, round areas, not clearing in the center, almost non-inflammatory, confined chiefly to the neck, face and shoulders, and frequently associated with *tinea tonsurans*, are characteristic of lesions caused by the *microsporons*.

2. Widely disseminated, superficial, inflammatory, non-ringed lesions may be caused by an *endothrix*, or by the *Tr. ochraceum*.



Fig. 59.—A severe ectothrix infection of the skin (*Tinea circinata*).

3. Completely ringed lesions, clearing in the center, and sometimes composed of rings within rings, sometimes slightly inflammatory and sometimes markedly inflammatory, with vesicles at the margins, may be caused by the *Microsporon lanosum*, or by an *ectothrix*, often the *Tr. rosaceum*. An *endothrix* is occasionally responsible.

4. Round, elevated lesions, not clearing in the center, often of considerable depth, are nearly always caused by an *ectothrix*, usually the *Tr. asteroides* or *cerebriforme*.

5. Deep kerion-like lesions, usually of the hands or forearms are always due to an *ectothrix*, usually the *asteroides* or *cerebriforme*, and are usually seen in those who work around horses.

Pathology.—In the first three groups of cases the infection is very superficial, the growth of the mycelia taking place largely between the horny layer and the granular layer. The granular layer may be missing and the upper prickle cells greatly enlarged, and staining very badly. There may be a marked proliferation of the basal cells, but otherwise they are normal. The papillæ are slightly œdematous, and the blood vessels in them are dilated. There is a slight amount of perivascular infiltration around the blood vessels of the corium, but very few other changes.

In the severe ectothrix infections the follicles are invaded and there is often a large amount of perifollicular infiltration, just as occurs in the scalp or beard.

Diagnosis.—The round spots that do not clear in the center must

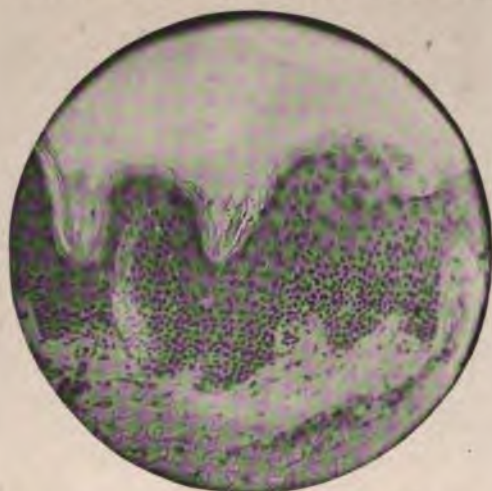


Fig. 60.—High power photomicrograph of lesion from *tinea circinata*, probably a mild ectothrix infection, although causal organism was not determined.

be differentiated from seborrhœa of the body, and at times this can only be done by finding ringworm of the scalp, or better by microscopical examination.

The rings are characteristic, and should not be confused with any other disease, although ringed seborrhœic dermatitis may be mistaken for this type of ringworm. Again microscopical examination is the deciding point.

The deep lesions may resemble various types of pyogenic infection, but they develop too slowly for lesions caused by cocci, and too rapidly for lesions caused by blastomycetes.

Prognosis.—The prognosis is good, for the lesions will usually disappear in a short time under treatment.

Treatment.—Usually an ointment composed of one dram of ammoniated mercury to an ounce of almost any base will clear up the trouble promptly. Or the lesions may be painted with the tincture of iodine. Many of the English writers extol chrysarobin, 5 to 40 grains to the ounce, but the author considers it unnecessarily irritating.

Ringworm in the Negro.—Unfortunately there have been no studies as to parasites causing ringworm in this race. It seems certain, however, that the severe ectothrix infections must be uncommon for forty cases seen by the author were of one of the first three clinical types. This is rather surprising, for kerion of the scalp is not at all infrequent.

TINEA UNGUIUM.

Synonym.—Ringworm of the nails.

Definition.—Infection of the nailbed by a ringworm parasite, characterized by degenerative changes in the nail.

Occurrence.—The condition is rare.

Etiology.—According to Sequiera this trouble is usually produced by a neo-endothrix (endo-ectothrix), often the *Tr. cerebriforme*, although various other organisms, usually of the endothrix type may cause it.

Symptomatology.—One or more finger nails may be attacked, the toe nails usually escaping. The infection is usually primary in the nail-bed, so that the space beneath the nail is occupied by a mass of horny cellular detritus, often several millimeters thick. The nails become lustreless, opaque and brittle, and split and crack, and are often thrown into ridges.

Diagnosis.—Psoriasis, eczema, coccal infection, or hypertrophy of unknown origin may simulate this condition. Scrapings should be taken from deep down beneath the nail, soaked over night in liquor potassi, and then examined microscopically.

Prognosis.—The disease is very chronic, and often defies treatment.

Treatment.—As much of the nail as possible should be removed, and the matrix treated with a strong salicylic acid ointment. After the horny tissue has been removed the ends of the fingers may be wrapped in solutions of iodine. In very severe case the entire nail must be removed and the matrix cauterized; even then there may be recurrence.

TINEA CRURIS.

Synonyms.—Eczema marginale; Ringworm of the inguinal region; Dhobie itch.

Definition.—A chronic infection of the groins, caused by the *Epidermophyton inguinale*, and characterized by brownish, scaly patches.

Occurrence.—The disease is not especially rare: in four thousand consecutive cases in whites I saw eleven instances. In America it seems to be much more uncommon among negroes than among whites.

Etiology.—The disease is due to the *Epidermophyton inguinale*, which was formerly believed to be a true trichophyton, and is very contagious.

Symptomatology.—The regions affected are the inner sides of the thighs, the groin and the gluteal cleft. The axillæ are occasionally involved. The lesions are usually two or three in number, rather large in size, sometimes having a diameter of six inches, are brownish in color, with an elevated, slightly inflamed edge, which is very well-defined. The parts may become eczematous, especially in warm coun-

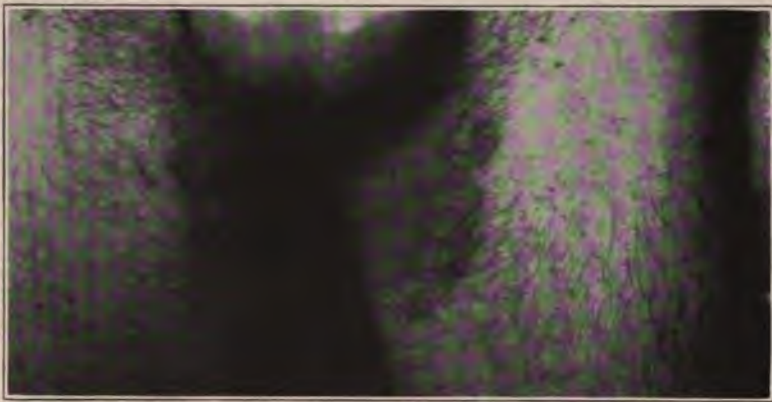


Fig. 61.—Tinea cruris. (Collection of Dr. Richard L. Sutton.)

tries. The disease is often very chronic, sometimes lasting for years, recurrences being common.

Diagnosis.—Patches of chronic squamous eczema may closely simulate it, but are usually redder, itch more, and are not so clearly cut. Erythrasma resembles it clinically, but is caused by a different parasite that can be recognized microscopically.

Prognosis.—The trouble is often very difficult to cure, relapses sometimes taking place months after all clinical signs have disappeared.

Treatment.—The following ointment will nearly always benefit the condition, but not always cure it:

R	Hydrar. ammon.	3 i	4.
	Acidi salicylici	3 ss	2.
	Petrolât., q.s.	3 i	30.

Whitfield¹⁸ recommends 5 per cent of benzoic acid and 3 per cent of salicylic acid in one part of vaseline and three parts of cocoanut oil. Patients must be careful with it as it may cause a good deal of local irritation. Tincture of iodine or chrysarobin may also be used.

ACUTE RINGWORM OF FEET AND HANDS.

Within a few years Sabouraud,¹⁹ Whitfield²⁰ and others have called attention to a rather acute type of ringworm of the hands and feet, sometimes localized between the fingers, and resembling an ordinary acute vesicular eczema. These infections are probably due to the same organisms that cause tinea cruris, namely the *Epidermophyton inguinale*, although Whitfield speaks of them as trichophytions. Whitfield recommends either the chrysarobin ointment, in the strength of 5 to 40 grains to the ounce, or the one composed of salicylic and benzoic acids mentioned under *Tinea cruris*.

TINEA IMBRICATA.

Synonyms.—Tokelau ringworm; Sealy ringworm; Chinese ringworm; India ringworm; Burmese ringworm; Malabar itch.

Definition.—An infectious disease of the skin, caused by ringworm parasite, and characterized by concentric rings.

Occurrence.—The disease is found in moist tropical countries, and is not so rare in India as was once thought.

Etiology.—The disease is due to a trichophyton, probably an *ectothrix*.

Symptomatology.—Both sexes are affected in about equal proportions, but children seem to be especially liable. The trunk and limbs are chiefly attacked. The lesions usually consist of concentric sealy rings, which spread peripherally. When the thin scales are removed fawn-colored patches remain.

Pathology.—The mycelium is very abundant and is long and interlacing. The spores are large, and oval or rectangular.

Treatment.—Castellani recommends:

R	Resorcin.	3 i	4.
	Ta., benzoin. co.	3 i	30.

TINEA VERSICOLOR.

Synonyms.—Pityriasis versicolor; Chromophytosis.

Definition.—An infectious disease of the skin, caused by the

¹⁸ Whitfield: Brit. Jour. Dermat., 1911, xxiii, 38.

¹⁹ Sabouraud: Ann. de dermat. et de Syphil., 1910, i, 289.

²⁰ Whitfield: Brit. Jour. Dermat., 1911, xxiii, 35.

Microsporon furfur, and characterized by yellowish-brown patches on the body.



Fig. 62.—A typical case of tinea versicolor.

Occurrence.—The disease is very common: it constitutes .8 per cent of all dermatoses, and inasmuch as it usually causes no symptoms

it is frequently neglected by the patient. The poorer classes are usually affected, but it is sometimes found in the very cleanly.

Etiology.—The *Microsporon furfur* is the causative organism. It is but mildly contagious. Men are more frequently affected than are women.

Symptomatology.—The disease begins as fawn-colored macules, that are covered with furfuraceous scales, and although at first discrete, may soon coalesce so as to cover large portions of the body. The chest and back are chiefly affected, but the shoulders, neck and upper arms may suffer in severe cases. The typical lesions are about four to five millimeters in diameter, and some of these isolated spots can always be found.

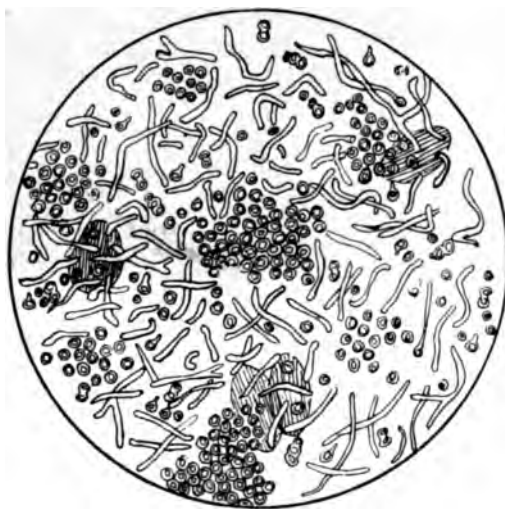


Fig. 63.—Parasite of tinea versicolor. (After Ohmann-Dumesnil.)

Special Varieties.—In the negro the lesions appear much lighter than the normal skin; in a very dark individual they may look almost white. In this race there seems to be a greater tendency for the neck, even including the postauricular portions to be invaded. I have never known a student to correctly diagnose this condition when seeing it for the first time, even though he was perfectly familiar with the disease among the whites. The disease seems to be slightly more prevalent in the Caucasian race than in the negro.

In exceptional cases the lesions may assume a distinct annular appearance, but this is very rare. Castellani²¹ has described three varieties that are characteristic to the tropics, the yellow form, the black

²¹ Castellani: Jour. Cutan. Dis., 1908, xxvi, 393.

form and the white form; he states that each is caused by a slightly different parasite.

Pathology.—The infection is very superficial; only the horny and possibly the granular layers are invaded. Both spores and mycelium are found in great abundance in the scrapings; the spores are usually arranged like bunches of grapes, so that they are absolutely characteristic.

Prognosis.—The prognosis is absolutely good; even extensive cases can be speedily cured.

Treatment.—The most effective as well as the most pleasant form of treatment is to apply the following locally twice a day:

R	Sodii hyposulphit.	3 iii	12.
	Glycerini	3 i	4.
	Alcohol	3 i	30.
	Aquæ, q.s.	3 vi	180.

The sulphur, ammoniated mercury, salicylic acid and resorcin ointments are not so effective as a rule, although it may be necessary to use them in order to clear up localized patches.

ERYTHRASMA.

Definition.—An infectious parasitic disease, caused by the *Microsporon minutissimum*, and characterized by reddish-brown patches, usually in the axillary or inguinal regions.

Occurrence.—The disease is rare in this country, but is more common in both Germany and France.

Etiology.—The disease is caused by the *Microsporon minutissimum*, and is only mildly contagious.

Symptomatology.—The disease usually begins in the inguinal region, but may be primary in the axillary skin. It develops rather slowly, but may, at a late date, cover wide adjacent areas of skin. The color is reddish-brown, the edge well-defined, and the whole patch scaly, the scales being furfuraceous. There is no tendency for spontaneous disappearances. Usually there are practically no subjective symptoms.

Pathology.—Only the superficial layers of the skin are invaded. Both spores and mycelium are very abundant, and the spores are extremely small; they do not form isolated groups as in *tinea versicolor*.

Diagnosis.—The disease must be told from *tinea cruris*, which can be done by finding an abundance of small spores in the scrapings.

Treatment.—Although the disease is rather more persistent than

is tinea versicolor, it can eventually be cured by the same form of treatment.

FAVUS.

Synonyms.—Tinea favosa; Tinea maligna; Porrigo scutulata.

Definition.—Favus is a contagious disease caused by the *Achorion Schönleini*, and characterized by the formation of yellow crusts about the hair follicles.

Occurrence.—Favus is not indigenous to America, and is primarily found among our Italian and Russian immigrants. Secondly it occurs chiefly in school children who attend the same schools with infected children. It is fairly often met with in dispensary service,



Fig. 64.—Favus of the scalp. The thinning of the hair can be plainly seen, and if one looks sharply he can distinguish the scutellæ surrounding the bases of the hairs in the thinned area.

about three-tenths of one per cent of all dermatological cases coming in for this complaint.

Etiology.—The disease in man is usually caused by the *Achorion Schönleini*, but four other species may occasionally cause the trouble in man. The disease is decidedly contagious.

Symptomatology.—The fungus of favus may affect the scalp, the body or the nails.

Favus of the scalp. The disease rarely affects those past fifteen years of age, but once started it may last for a long time. The onset is usually slow, beginning as a superficial, scaly macule. The follicles are soon invaded, and there then appear characteristic yellow crusts

surrounding the bases of the hairs. These crusts are usually from three to four millimeters in diameter, are saucer-shaped, with the concave side uppermost, and are called the *favus scutula*. At first these small crusts are discrete, but later they become confluent and there is simply a heavy yellow crust upon the scalp. The hairs become lustreless and brittle, and break, split or fall, so that areas of baldness are caused. The loss of hair is often permanent, for the follicles are destroyed.

Favus of the glabrous skin exhibits symptoms similar to those upon the scalp, the infection centering around the lanugo hair follicles. There is apt to be more crusting than in other localities. The disease may occasionally invade the mucous surfaces. Subjective symptoms

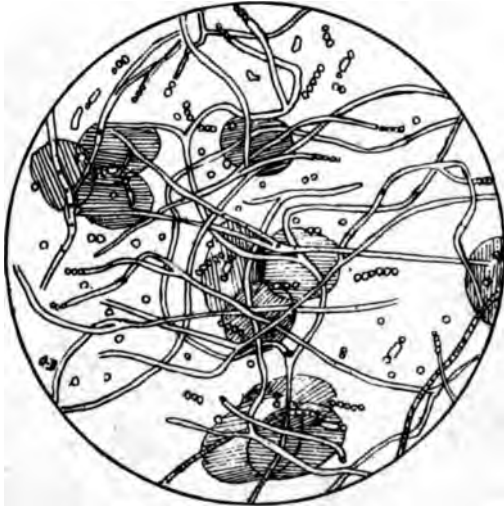


Fig. 65.—The parasite of favus. (After Ohmann-Dumesnil.)

are usually absent. In the majority of instances only small areas are affected, but in a few cases the involvement has been widespread.

Favus of the nails resembles ordinary ringworm infections in all particulars, except that the granular detritus may have a more or less pronounced yellowish color.

Pathology.—Both the mycelia and spores exist in large quantities in the scales. The pathology is very similar to that of ringworm, the disease primarily being a superficial infection of the skin, and secondarily invading the hair follicles. The hair itself is invaded. In the skin only the upper layers are invaded, infection not reaching to the depths of the follicles.

Diagnosis.—The yellow crusts, with some scutulla, the brittleness

and loss of hair, and the easy demonstration of the fungus make the diagnosis easy. Ringworm, seborrhœa and psoriasis might be confused.

Prognosis.—The disease is very chronic, and does not clear up spontaneously as does ringworm. Old standing cases are only curable if the patient is very persistent. The loss of hair is usually permanent. Favus of the skin is easy to cure.

Treatment.—First the hair should be cut and the crusts removed by means of oil, and of soap and water. Antiseptic ointments should always be used as in ringworm. Undoubtedly the best treatment for favus of the scalp is epilation by means of the X-ray, as advised under tinea tonsurans. If this cannot be employed the hair should be epilated by hand. Favus of the body can be cured by the same means as employed for tinea circinata.

CHAPTER XII.

DISEASES DUE TO ANIMAL PARASITES.

ORIENTAL SORE.

Synonyms.—Delhi boil; Delhi sore; Oriental boil; Kandahar sore; Pendjeh sore; Natal sore; Aleppo boil; Biskra button; Gassa button; Veld sore; Brazilian buba.

Definition.—A specific granuloma of the skin, caused by Leishman-Donovan bodies, and characterized by ulceration, with later scar formation.

Occurrence.—The disease is not uncommon throughout the hot parts of Asia, as all who have read Kipling know. It is also found in Africa and various of the eastern islands. More recently it has been described in Brazil, Panama and Mexico. McEwen's¹ article gives an excellent idea of American history, as well as its relationship to other cutaneous disorders.

Etiology.—It is now generally believed that the Leishman-Donovan bodies (of tropical splenomegaly) are the causative organisms. McEwen thinks that the intracellular diplococci sometimes found may be of some importance. In all probability the disease is transmitted by some insect carrier.

Symptomatology.—The period of incubation may be one week or more than one month. The lesions usually appear upon exposed parts, chiefly the face, but at times the mucous membranes may be affected as in some of the Brazilian cases reported by Splendore,² and by him exhibited at the International Congress for Dermatology held in Rome in 1912. The initial lesion is a papule, which is hard and vascular and upon which a central crust forms. Central necrosis later occurs, and an indolent, irregular, sharply-cut ulcer results. This heals after several months and pronounced scarring usually results. In the cases described by Splendore there was marked ulceration of the mucous membranes and at times death resulted from cachexia, apparently due to internal infection.

Pathology.—McEwen states that the epithelium is hypertrophied, where not destroyed by the ulcerative processes, and that within the epithelial tissue there are a number of abscess cavities similar to those of blastomycosis. The mass of the nodule is formed from inflamma-

¹ McEwen: Jour. Cutan. Dis., 1914, xxxii, 275.

² Splendore: Arch. f. Schiffs und Tropen Hygiene, 1911, xv, 105.

tory tissue, the perivascular infiltration being especially marked. The cells are polymorphonuclears, lymphocytes, plasma and epithelioid cells. There are a few large mononuclear endothelial cells that contain the Leishman bodies.

Prognosis.—In the cutaneous cases the prognosis is good, in the mucous membrane cases it seems to be rather grave.

Treatment.—My case was cured by curettage and cauterization with the acid nitrate of mercury; the actual cautery would probably be even better. Upon the face it might be wise to first try the X-ray. It should always be remembered that spontaneous healing gives a marked scar formation.

SCABIES.

Synonym.—The itch; Norwegian itch; Cuban itch; Seven years' itch.

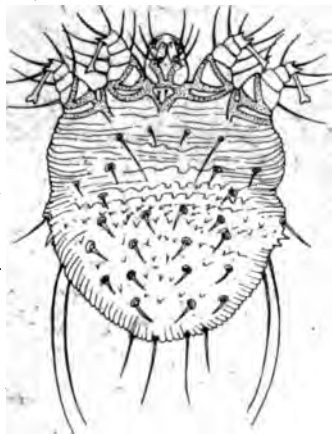


Fig. 66.—The female itch mite. (Redrawn after Braun.)

Definition.—A contagious disease, due to the *Acarus scabiei*, and characterized by papular and vesicular lesions and intense itching.

Occurrence.—Scabies is a very common disease, constituting about six per cent of all cases seen in dermatological dispensaries. According to my experience, it is much commoner in negroes than in whites; in 2,000 skin cases in whites there were 136 cases of this infection, while in the same number of blacks there were 211 cases.

Etiology.—The disease is due to the *Acarus scabiei* (*Sarcoptes scabiei*, *Sarcoptes hominis*), which is really a minute spider. The female mite is responsible for the trouble, for she burrows into the skin in order to lay her eggs, while the male remains upon the surface. the female is about $\frac{1}{10}$ of an inch in length, and a little less in

width. After laying her eggs she usually perishes. It takes about six days for the larva to develop in the egg, and about two more weeks before full adult growth is reached.

The disease is very contagious, and usually affects most of the members of a household into which it is introduced. It is generally acquired by sleeping with an infected individual, or by occupying an unchanged bed in which an affected person has slept. It may also, but rarely, be acquired from infected linen, gloves, etc.

Symptomatology.—The first symptom is itchiness, usually between the fingers and upon the backs of the hands. In the very cleanly this spreads but slowly, but in those who are not so particular as to



Fig. 67.—A comparatively mild case of scabies, showing typical distribution of lesions upon hands and wrists.

their personal habits the spread is very rapid. In a well-developed case the parts most affected are the webs of the fingers, the backs of the hands, occasionally the palms, the flexor surfaces of the wrists, the flexor surfaces of the arms, especially around the elbows, the axillæ, the lower part of the abdomen, the buttocks, and the inner surfaces of the thighs. In women the submammary folds are usually affected, and in men the genitalis suffer severely. The face is never affected except in children under two years of age. The lesions are rare upon the feet, but do occur between the toes at times. Upon

inspection it can be noted that the primary lesion is either a vesicle or a papule. Burrows are not found in all cases, as the text books would have us believe, but when they do occur are quite characteristic; they are most common between the fingers and consist of either straight or tortuous lines, varying in length from one-eighth to one-half an inch, and ending in a slight elevation. Along the line may be noted numerous black dots, caused by the excreta of the female. The itching is usually very intense, and is especially bad at night, often preventing sleep. The patients usually give the history of having caught the infection from a relative or friend.



Fig. 68.—A severe case of scabies, in which there has been secondary infection with a staphylococcus, causing many pustules.

Special Forms.—In the very cleanly there may be not more than a dozen lesions all told. Those who have their hands much in water are often nearly free of the eruption upon these parts.

Babies or young children often suffer severely, the parasite attacking practically every portion of their body except the scalp. The lesions are very apt to become pustular.

In the very uncleanly the entire body may be covered by the eruption. In addition secondary infection may supervene, and there be many pustules or even abscesses. In still other instances heavy crusts may form, the so-called Norwegian itch.

Pathology.—The burrow is formed in the lower portion of the

horny layer, and in it may be found a moderate number of polymorphonuclear leucocytes, and the fæcal matter deposited by the female parasite. At the end of the burrow are the eggs and the corpse of the adult. Surrounding the vesicles there is a moderate amount of inflammatory exudate, usually of the acute type.

Diagnosis.—Three other diseases producing general itching need to be differentiated, namely, *urticaria*, *pediculosis corporis* and *pruritus*. In urticaria the only lesions visible are transient wheals. Wheals can nearly always be produced by rubbing the back with the back of a key or the edge of a coin. There are very rarely any papular or vesicular lesions, especially between the fingers or upon the flexor surfaces of the wrists. In pediculosis corporis one can usually find long scratch marks between the shoulder blades. The genitalia are never invaded. The parasites may often be found in the seams of the underclothing. In pruritis there are no visible lesions except scratch marks; the diagnosis can only be made by exclusion; pruritis is a much rarer disease than is usually believed. Owing to the fact that scabies may produce genital lesions, it is often confused with either syphilis or chaneroids, although curiously enough the text books do not speak of this possibility of error in diagnosis. A careful search of the body and the finding of other lesions should always settle the question. Very rarely it may be difficult to tell scabies from an early papular eczema, but a study of the distribution and of the history of the case will usually guide the physician.

Prognosis.—The prognosis is good; itching can usually be stopped in two days, and the disease cured in two weeks. So far I have failed to meet a single case that was not readily cured.

Treatment.—Sulphur and balsam of peru are the two drugs that are almost universally employed. Balsam of peru should not be used unless absolutely necessary for two reasons: first, because it is very irritating to many skins, and, second, because it often causes albuminuria, thus showing that some kidney irritation is produced. Sulphur may be prescribed in the following form:

R Sulph. precip.	3 i	4.
Petrolat., q.s.	3 i	30.

This should be rubbed freely over the body at night, always being preceded by a careful hot bath, with the free use of soap and a scrub brush. Green soap is probably the most effectual. This is to open up the burrows in the horny layer. When balsam of peru is employed it is usually used in the strength of about one dram to the ounce, or it may be combined with sulphur, using one-half dram of each. Some experienced dermatologists claim that they frequently encounter

cases in which a few persistent papules remain, and that they will not yield to sulphur, but that balsam of peru will promptly cause them to disappear. Personally I have as yet failed to meet a single case that was not cured by sulphur; those cases in which the drug did not take effect were the ones that did not use a sufficient quantity of soap and water. Of course one must be careful not to produce a dermatitis from overmedication; such instances are far from rare. I have often seen drugs pushed because of a dermatitis produced by them, the patient imagining that the disease was spreading.

Contrary to the general impression, I feel that the underclothes should be changed at least twice a week, for the organisms can probably collect in those portions that are not sulphur saturated. I am sure that my results have been more prompt when the clothes were frequently changed. Likewise the bed clothes should be changed, and boiled, at least twice a week. It is best to disinfect the blankets, but not necessarily the mattress and pillows. Of course all members of the household must be cured, since one can easily respread the infection.

PEDICULOSIS CAPITIS.

Synonym.—Lousiness of the head.

Definition.—An infection of the scalp with head lice.

Occurrence.—Well over two per cent of all cases seen in the dermatological clinics are examples of this ailment. Curiously enough in my series of 2,000 cases of skin disease in the negro there were but three instances of this infection. All other writers have had about the same experience. Why such a difference should exist is rather hard to explain. Some have thought that it was because the negro mothers were so particular of their children's scalps, but in view of the large number of cases of tinea tonsurans and the very indifferent attention given them this cannot be the explanation; neither can the use of a fine-tooth comb, for many of the poorer class of children never have a comb used upon them. There must exist a natural immunity of some kind, as yet undetermined.

Etiology.—The disease is usually caught in the schools, probably sometimes by actual contact, but more often by wearing infected hats. The parasite belongs to the family pediculæ of the subdivision of hemiptera; it is, of course, an insect. The louse is from 1 to 3 mm. in length and is light-gray in color. Its general characteristics are shown in Fig. 69. These parasites multiply very rapidly; about fifty eggs are laid at one time, and are attached to the hair shafts by a sort of cement. These nits are oval, about $\frac{1}{2}$ mm. in length and are of a gray translucent color. The free end always points towards the

distal end of the hair, never towards the scalp. They hatch out in about one week, and the young become capable of reproducing in about two weeks more.

Symptomatology.—Itching of the scalp is usually the first sign of trouble; then a search discloses nits upon the hairs, and the parasites at the base of the hairs near the scalp. Quite frequently there may be seen pustules upon the back of the neck (see Fig. 70), due to the bites of these insects. The cervical lymphatic glands may become very much swollen, but only rarely break down. Much more common is the formation of infected areas upon the scalp, with a subsequent oozing, and the glueing together of the hairs. In some instances the parasites are so abundant that they may be seen wandering upon the adjoining cutaneous surfaces, but usually only a few can be seen upon the surface of the hair.



Fig. 69.—The head louse. (After Ohmann-Dumesnil.)

Diagnosis.—The diagnosis is very easy—all that is necessary is to be able to tell a nit from a bit of dandruff, and this is not difficult, for the dandruff can be flaked off while the nit cannot.

Prognosis.—The outlook is good; the cases can be cured in a short time.

Treatment.—Our routine treatment has been to soak the hair with crude petroleum, then bind it up in a dry towel over night, cautioning the patient to keep away from the fire. This should be repeated for six nights. Upon the seventh day the hair should be thoroughly washed with sodium bicarbonate for the purpose of loosening the nits. It may be necessary to repeat this course once. The tincture of *coccus indicus* (larkspur) has a considerable reputation, but is not so effective, although good. It is diluted with one to three parts of

alcohol, and the scalp sponged with it twice daily for five or six days. In women who have long hair Whitfield² strongly recommends the use of a two per cent solution of carbolic acid. The patient should lie upon her back in bed, so that the hair falls down beyond the edge into a basin filled with the solution. The contents should be repeatedly poured over the scalp until it is certain that the hair is thoroughly saturated; then the scalp is bound up in a towel for from one to three hours, and then washed with soap and water. No matter



Fig. 70.—Pustular eczema of the nape of the neck, due to bites from the head louse. (After Ohmann-Dumesnil.)

what form of treatment is used, the hair should be carefully combed with a fine-tooth comb to remove nits and dead parasites.

PEDICULOSIS CORPORIS.

Synonyms.—Vagabond's disease; Pediculosis vestimenti; Phthiriasis corporis.

Definition.—The occurrence upon the body of body lice.

² Whitfield: Skin Diseases and their Treatment, London, 1907, p. 40.

Occurrence.—This disease constitutes about three-quarters of one per cent of all skin disorders. It occurs with equal frequency in the whites and blacks.

Etiology.—The body louse is about one-third larger than the head louse, but closely resembles it in general appearance. The eggs are laid in the seams of the underclothing, or upon the lanugo hairs. The young are not so often infested as are the old. Those whose general health is run down and the very dirty are especially apt to suffer.

Symptomatology.—There is a practically generalized itching, but the lesions are more numerous where the clothes are in close contact



Fig. 71.—The body louse. (After Ohmann-Dumesnil.)

with the skin, as upon the shoulders. At times there may be seen small hæmorrhagic points, due to the bites, but these are not always present. The secondary lesions are the scratch-marks, usually linear, and most pronounced between the shoulder blades, and upon the shoulders. These often produce some scarring or atrophy, showing the violence of the scratching. Marked pigmentation of the skin may result and be mistaken for Addison's disease.

Diagnosis.—Scabies, urticaria and pruritus may be confused. Scabies can readily be distinguished by its distribution, noting especially the prevalence of lesions upon the hands and genitalia. In urticaria a wheal will form upon irritation; but it should always be

remembered that an urticaria may arise secondary to pediculosis. The diagnosis of pruritus should be made only by the exclusion of these other affections. Characteristic of pediculosis corporis are the presence of linear scratch-marks between the shoulders, and the finding of the parasites upon the underclothing, especially in the seams.

Treatment.—Thorough disinfection of the underclothes, and preferably of the outer garments as well, will usually affect a cure, but in a few instances, where the eggs have been laid upon the lanugo hairs, this will not suffice, and antiseptic baths or ointments are necessary. A sulphur ointment, well rubbed into the body, or a bath in



Fig. 72.—Pigmentation and scars produced by violent scratching (Pediculosis corporis).

a weak bichloride of mercury solution, will then be efficient. Jamieson⁴ advises the use of a piece of roll sulphur about 1½ inches in diameter, to be put in a muslin bag and worn beneath the underclothes day and night.

PEDICULOSIS PUBIS.

Synonym.—Crabs.

Definition.—An infection of the pubic region with the *Pediculus*. pubis.

⁴ Jamieson: Brit. Jour. Dermat., 1895, vii, 248.

Occurrence.—This ailment constitutes about one-fourth of one per cent of all dermatological cases, being much commoner in dispensary than in private practice. It is about equally prevalent among negroes and whites.

Etiology.—The causative parasite is the *Pediculus pubis*, which differs somewhat from the head or body louse, being only from one to two millimeters in length, and nearly as broad as long. The infection may be caught from sexual intercourse or from the use of infected toilets.

Symptomatology.—The disease is most common upon the pubic region, but may also involve the axillary hairs or the eyebrows and lashes. In all cases there is considerable itching, and often an eczematous condition of the skin. The glabrous skin in the vicinity is usually invaded. Associated with this condition are the curious steel-



Fig. 73.—The pubic louse. (After Ohmann-Dumesnil.)

gray stains in the skin, the *maculae ceruleae*, which are usually found upon the abdomen and inner aspects of the thighs, but which may be more widely distributed. They are pathognomonic of the pediculosis pubis, but do not occur in all instances of this infection.

Diagnosis.—The diagnosis is made upon the finding of the nits or the parasites.

Treatment.—The classical treatment is the shaving of the hairs and the rubbing in of mercurial ointment, but this may be distinctly dangerous, as I⁵ have shown. There may be sufficient absorption not only to cause a local dermatitis, but also to occasion very severe general symptoms. It is much better to wash the parts with a one to five hundred solution of bichloride of mercury, or to use a sulphur or an ammoniated mercury ointment. Frequent washing will probably cure the condition, and the nits can be removed by shaving, or by washing with a solution of bicarbonate of soda.

⁵ Hazen: *Virginia Med. Semi-Monthly*, 1912, xvii, 3.

BROWN-TAIL MOTH DERMATITIS.⁶

For the last fifteen years cases of dermatitis due to contact with the brown-tail moth have been reported from New England. The disease is usually seen in May or June, about the time the caterpillar reaches its full growth. The trouble is produced by the nettling barbed hairs, which occur upon the caterpillar, the cocoon and the moth, the hairs containing an irritating substance. Treatment consists in the use of a soothing lotion, such as calamine, although Holland recommends the use of mercuric chloride lotion in the strength of one to one thousand and the painting of each spot with flexible collodion.

GRAIN-ITCH.

Synonyms.—Straw-itch; Straw-mattress disease.

Definition.—Grain-itch is an eruptive disorder, caused by the *Pediculoides ventricosus*, and characterized by an urticarial-like eruption.

Occurrence.—The disease is very much commoner than has been believed, for in the past it has not been recognized. Schamberg⁷ has shown that the disease is fairly common through the middle-western part of the United States, and that it may be acquired from infected straw.

Etiology.—The disease is due to contact with cereals or straw that is infected with a mite, the *Pediculoides ventricosus*. All who handle the straw or grain are liable to infection, but the most severe infections have occurred in those who slept upon infested mattresses.

Symptomatology.—The characteristic eruption is wheal-like with a minute vesicle at the summit. In other instances the eruption resembles that of erythema multiforme. The itching is intense.

Diagnosis.—Either urticaria or scabies is usually diagnosed, but the eruption may simulate chicken-pox.

Treatment.—Baths and the destruction of the infected straw will bring about a cure. Calamine lotion is grateful to the patient.

CREEPING ERUPTION.⁸

This disease, also called *larva migrans*, is due to a minute migrating larva, probably of a bot-fly or *œstrus*. The disease is characterized by the presence of a serpiginous, elevated red line, usually upon the

⁶ Tyzzer: Trans. Internat. Dermat. Congress, 1908, ii, 169.

⁷ Schamberg: Diseases of the Skin, 2nd Ed., Philadelphia, 1913, 204.

⁸ Hutchins: Jour. Cutan. Dis., 1906, xxiv, 270. Wosstrikow and Bogrow: Arch. f. Dermat. u. Syphil., 1908, xc, 323.

exposed parts—the face, hands or feet. The larva moves about an inch a day. The best treatment is to inject a few drops of chloroform at the end of the line.

GROUND-ITCH.⁹

This affection is also called toe-itch, water-itch and water sores, and is caused by the larvæ of the hookworm, which gains entrance to the body through the skin. The eruption usually resembles an acute eczema. The cutaneous lesions produced by the larva are of no particular importance, but the latter lesions produced by the adult worm are of great economic import in the southern part of the United States, as well as in many foreign countries. The treatment is essentially the same as for acute eczema, as it is highly probable that antiseptic solutions cannot be applied in time to prevent the internal infection.

OTHER PARASITES.

Other parasites of more or less importance are the *leptus*, commonly known as “chigger,” the *Demodex folliculorum*, the *gad-fly*, the *black-fly* or *simulium*, the *mosquito*, the *midge*, the *bed-bug*, the *flea*, various varieties of *lice* that ordinarily infect poultry, and some species of *ticks*.

The *leptus* attacks those who go into the grass or bushes, and may cause a rather severe pustular eruption. Sulphur or balsam of peru will prove curative.

The *Demodex folliculorum* is a microscopic parasite that lives in the hair follicles. According to Dubreuilh,¹⁰ it may cause a pigmentation similar to the eruption of *tinea versicolor*.

The lesions produced by the *black fly* have recently been carefully studied by Stokes.¹¹ The bites may be prevented by rubbing tar upon the skin.

⁹ Smith: Jour. Amer. Med. Assn., 1906, xlvii, 1693.

¹⁰ Dubreuilh: Jour. de med. de Bordeaux, Jan. 27, 1901.

¹¹ Stokes: Jour. Cutan. Dis., 1914, xxxii, 751, 830.

CHAPTER XIII.

DISEASES PROBABLY DUE TO EXTERNAL INFECTIONS.

ERYSIPELOID.

Synonyms.—Erythema migrans; Erythema serpens.

Definition.—An infectious disease of unknown etiology, characterized by spreading erythema without constitutional symptoms.

Occurrence.—In the majority of places this disease is rare, but in Baltimore it is quite common.

Etiology.—Gilchrist's¹ careful investigation showed that 323 out of 329 cases were caused by the bites of crabs, and most of the others from handling fish, or occasionally meats. Gilchrist could find no organisms, and his attempts to reproduce the disease by experimental inoculations were likewise failures.

Symptomatology.—The disease nearly always occurs upon the hands, usually starting upon a finger as an erythematous patch, and then slowly spreading up the hand, and at times involving nearly the whole hand. There is very rarely lymphatic involvement. The patch looks red and feels warm, and the lesion is slightly raised, and the edge sharply-defined. As the edge progresses the center fades. There may be slight itching or burning. The trouble will heal spontaneously, usually in about two weeks.

Diagnosis.—The malady closely resembles a very mild erysipelas, but there are no constitutional symptoms and the spread is too slow. The history is always a great aid in making a correct diagnosis.

Treatment.—If the tincture of iodine be painted upon the lesion and just beyond its advancing edge the trouble can usually be rather promptly stopped.

MOLLUSCUM CONTAGIOSUM.

Synonyms.—Molluscum epitheliale; Molluscum sebaceum; Epithelioma contagiosum.

Definition.—A contagious skin disease of unknown etiology, characterized by the presence of small, discrete, pearl-like papules.

Occurrence.—The disease is not an especially common one, although according to the figures of the American Dermatological Asso-

¹ Gilchrist: Jour. Cutan. Dis., 1904, xxii, 507.

ciation it constitutes fifteen one-hundredths of one per cent of all skin diseases. Personally I feel that these figures are rather high.

Etiology.—The ailment is contagious, although there have been some few dermatologists who doubted this point. The publication of Stelwagon² should have settled this question years ago. The incubation period varies from several weeks to three or four months. Many of the English feel that the Turkish bath is the usual source of contagion. The disease is more frequent among poor children than elsewhere. The causal organism is still unknown, although recently Campana³ claims to have isolated and grown a sporozoön, which he



Fig. 74.—Molluscum contagiosum.

is sure is the cause. Spirochaetes have also been described from within the lesions.

Symptomatology.—At first the lesions are very small, waxy, discrete, rounded or acuminate elevations, that usually appear upon the face, although they may also be upon other portions of the body. They gradually increase in size until they may attain a diameter of 5 to 7 mm. They retain their early characteristics, except that they become distinctly umbilicated. If squeezed, a cheesy-looking substance is obtained. These papules are very chronic, usually lasting for months,

² Stelwagon: Jour. Cutan. Dis., 1905, xxiii, 50.

³ Campana: Clin. Dermosifilopatica d. R. Univ. d. Roma, May, 1914, No. 2.

but may terminate either by absorption or by inflammation and necrosis.

Pathology.—The growth is really a hyperplasia of the prickly cells of the rete. These cells are cut up into sections by connective tissue stromata, and in the interior of the lobules there may be found many degenerated cells, the molluscum bodies. White and Robey⁴ have shown that the squamous cells are converted into keratin. Below this sharply-circumscribed mass of proliferated epithelial tissue there is an infiltration of the corium with small round and fixed cells, a chronic inflammatory exudate.

Diagnosis.—The presence of waxy, discrete, umbilicated lesions should render the diagnosis easy. Multiple benign cystic epithelioma

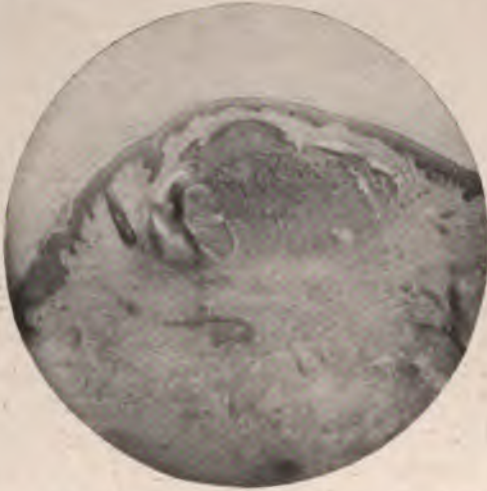


Fig. 75.—Low power photomicrograph, showing histopathology of molluscum contagiosum.

or cysts of the sweat ducts might be confused, but the difference in contents should serve to establish a diagnosis.

Prognosis.—The prognosis is good; the cases can easily be cured.

Treatment.—The lesions should be opened and the contents squeezed out, and the cavities then cauterized with a stick of silver nitrate or the tincture of iodine.

WART.

Synonym.—Verruca.

Definition.—A wart is a small growth, consisting of hypertrophied

⁴ White and Robey: Jour. Med. Research, April, 1902, 255.

epithelial and fibrous tissue, and characterized by the presence of a circumscribed elevation.

Occurrence.—Warts are very common; nearly every person has had them at some time. They constitute well over one per cent of all skin diseases for which people seek treatment, but in reality are much commoner than that.

Etiology.—Warts are commoner in the young than in the old. Jadassohn⁵ and others have shown that warts are inoculable, and also auto-inoculable. The causative organism is not known.

Symptomatology.—Several varieties must be mentioned, the *verruca vulgaris* or *common wart*; the *verruca digitata* or *digitate wart*; the *verruca plana* or *flat wart*; the *verruca filiformis* or *thread-*



Fig. 76.—Plantar warts—a not uncommon location, although not always diagnosed.

like wart; and the *verruca acuminata* or *venereal wart*, which is described elsewhere.

Verruca vulgaris or *common wart* usually occurs upon the hands; it varies in size from 1 mm. to 1 cm. in diameter and may be considerably elevated. The surface is horny and irregular, and between the elevations may be seen black specks, the “seeds” of the laity, but in reality dirt. As a general rule, there are no symptoms, but when these growths occur upon the sole of the foot they may cause intense pain upon walking or standing. Sutton⁶ has called special attention

⁵ Jadassohn: Vorhandl. der V. Deutschn Dermatol. Gesellscher, 1895, 497.

⁶ Sutton: Amer. Jour. Med. Sc., 1912, 71.

to this class. It is worth noting that warts are often seen as a complication of eczema.

Verruca digitata is characterized by clefts which run nearly down to the base. It is most common upon the scalp; the surface is very hard and the base is rather soft, and has a tendency to bleed easily if injured. It is more apt to be solitary than are the other varieties.

Verruca plana, or *flat wart*, is the name applied to the flat, smooth, pigmented warts that come upon the backs of the hands or the faces of the old or young, and which eventually become covered with greasy scales, and which are so apt to end in cancer. These growths will be fully considered under the heading of keratoses, for they are probably not true warts.

Verruca filiformis is the name given to a thread-like growth that usually springs from the neck. There is first one parent wart and then a crop. They are much more common in women than in men. These warts are of varying lengths, usually not over a quarter of an inch.

Pathology.—The primary proliferation is doubtless in the rete, and the apparent lengthening of the papillæ is secondary, they appearing longer because of the downgrowths of the rete. The horny layer is usually markedly hypertrophied. The prickle and basal cells maintain their relationship to each other, and no snaring off of epithelium occurs. The papillary vessels are somewhat dilated, but there is usually no active sign of inflammation.

Diagnosis.—Ordinary warts are so well-known that it is superfluous to say anything about their diagnosis.

Prognosis.—Ordinary warts may be annoying but are not serious. The flat or senile warts frequently become cancerous, but the common warts never do. They can usually be rather easily cured.

Treatment.—Warts may be mechanically or chemically removed, or gotten rid of by the X-rays or radium. The simplest way to treat small warts is to curette them off and cauterize the base with silver nitrate. The filiform warts may be sniped off with a pair of scissors and then cauterized. Or the electric needle may be employed, always using the negative pole in order to avoid a metallic deposit in the tissues. One very interesting fact is that if one wart be slowly destroyed mechanically, as by the use of the electric needle, the other warts may disappear; it is possible that autovaccination takes place. Warts may be removed by applying various caustics to them; the best being trichloroacetic acid, nitric acid, caustic potash, glacial acetic acid and many other caustics. After the horny base has been removed CO₂ snow will usually prevent recurrence. Sutton considers this the best way to deal with plantar warts, and the author is inclined to agree

with him. The use of radium will remove warts, and a 5 Holzkecht unit dose of the X-rays will often, but not invariably, do the same thing.

When warts come out in crops they can often be destroyed, as well as the formation of new ones prevented, by mopping over the surface a saturated solution of salicylic acid in alcohol. When this cannot be borne the alcohol alone seems beneficial.

Some of the English dermatologists have a rather peculiar notion that small daily doses of magnesium sulphate will be followed by the disappearance of the growth, but this method has always completely failed the majority of American observers, possibly because the warts were not as yet ready to disappear spontaneously. Arsenic is likewise lauded by some good men, but its results are by no means certain. The use of the high-frequency spark or of fulguration is not satisfactory unless a powerful current be employed or the horny portion first removed.

VENEREAL WART.

Synonyms.—*Verucca acuminata*; *Condyloma acuminata*; Moist wart; Pointed wart; Fig-wart.

Definition.—A projecting, vegetating, new growth, usually of the genital regions and due to irritating discharges.

Occurrence.—This disorder is very common, especially among the poorer classes, and is daily encountered in large genito-urinary dispensaries.

Etiology.—This wart is usually associated with irritating discharges due to venereal disease, most often gonorrhœa. Stelwagon⁷ states: "These warts and their secretions are doubtless contagious but autoinoculable. Ducrey and Oro found in the secretion, in the growth and tissues, in addition to the *Staphylococcus pyogenes aureus* and *Bacillus subtilis*, two colonies of unknown microorganisms, but experiments with these latter on animals and man failed to produce any result."

Symptomatology.—These warts usually occur on the mucous or muco-cutaneous surfaces of the genitalia or the anal regions. They are generally single but may be multiple, may be large or small, are bright red in color, sessile or pedunculated, and markedly resemble a cock's-comb. There is always considerable moisture, and there may be areas of necrosis, or of more or less heavy crusts.

Pathology.—There is a very marked hypertrophy of the epithelium, which often dips deeply down into the corium. The papillæ

⁷ Stelwagon: *Diseases of the Skin*, 7th Ed., 552.

are hypertrophied and are œdematous, but this apparent hypertrophy is secondary to the epithelial change and is not primary. There are also evidences of chronic inflammation, the blood vessels being dilated and there being more or less infiltration with spindle and round cells.

Prognosis.—The prognosis is good.

Treatment.—These lesions should be excised and the base cauterized.



Fig. 77.—Multiple venereal warts. (Dr. H. A. Fowler's case.)

PEMPHIGUS FOLIACEUS.*

Pemphigus foliaceus is extremely rare. It commences with vesicles that are usually localized and that have flaccid walls; later the eruption spreads either by the formation of new vesicles at more or less distant areas, or by the gradual spread of the original lesions through a process of undermining the adjoining skin, somewhat as does *dermatitis repens*. The disease nearly always ends fatally. In the author's cases it was possible to reproduce the lesions upon the same subject by the injection of the contents of the blister or by the injection of bacteria grown from it. Normal saline solution would not pro-

*Hazen: Jour. Cutan. Dis., 1910, xxviii, 118; 1912, xxx, 325; 1914, xxxii, 131. Low: Brit. Jour. Dermat., 1909, xxi, 101, 139.

duce such a lesion. In two of my cases the *Bacillus pyocyaneus* was recovered from unruptured lesions during life, and from the viscera after death, and in the other two cases a *Staphylococcus albus* from the lesions and the colon bacillus from the circulating blood. Three lines of treatment are open—either the continuous tub, autogenous bacterins, or keeping the patient covered with a bland powder, as recommended by White.⁹

PEMPHIGUS VEGETANS.¹⁰

Vesicles first appear in the mouth or around the genitalia, and from the bases spring papillomatous vegetations. Later similar growths may originate in the various flexures of the body. Usually there is considerable fever and the patients gradually become exhausted and die. Various bacteria have been described, notably the *pyocyaneus* and the *pseudo-diphtheria bacillus*, but as yet there is no good proof that they are the exciting causes. It seems probable to me that various bacteria may excite this trouble and that death takes place through a terminal infection. Inasmuch as the various bacteria have not proven lethal to animals except in enormous doses, only those patients with a lowered resistance must suffer.

ALOPECIA AREATA.

Synonym.—Alopecia circumscripta.

Definition.—Alopecia areata is a disease of unknown etiology, characterized by the falling of the hair in circumscribed patches.

Occurrence.—Alopecia areata is a not uncommon affection, constituting nearly one per cent of all cutaneous maladies.

Etiology.—Both sexes are affected about equally, but the disease is most frequent in those between the ages of ten and forty. As to the specific cause there are two widely divergent theories; first, that the disease is due to a neurosis, and secondly, that it is due to a specific infection. There is very little in support of the first theory except that it is known to occur in nervous subjects, and that Joseph¹¹ has shown that by excising the ganglion of the second cervical nerve of the cat he could produce an alopecia. Against the theory is the fact that the distributions of the lesions do not follow the course of any of the cutaneous nerves, and that they spread peripherally away from the area that might be supplied by one nerve. In addition anti-

⁹ White: Jour. Cutan. Dis., 1912, xxx, 705.

¹⁰ Hamburger and Rubel: Bull. Johns Hopkins Hosp., 1903, 63. Winfield: Jour. Cutan. Dis., 1907, xxv, 17, 71. Stanziale: Annal. de dermat. et de syphil., 1904, 15.

¹¹ Joseph: Monatsh. f. prakt. Dermat., 1886, v, 483.

parasitic treatment undoubtedly produces better results than any other. Distinctly in favor of the parasitic theory is the fact that a number of epidemics have occurred.

Symptomatology.—The hair may fall rapidly or slowly; occasionally the first thing noticed will be the sudden falling of a lock of hair. But in the vast majority of instances the hair begins to fall in a central patch and then the falling continues from the periphery. Other patches usually appear in a short space of time and develop in the same way, two or more bald areas often coalescing. One patch may be very small or may be three or four inches in diameter. The



Fig. 78.—Alopecia areata. Numerous small patches have coalesced forming a rather unusual picture, inasmuch as the baldness is not as complete as usual.

posterior portion of the scalp is most apt to be affected. However, the disease may occur upon any portion of the scalp or bearded region. The affected area is usually perfectly bald and smooth, although in a few instances a few straggling hairs remain, chiefly of the small, fine type. The hairs at the margin of a spreading patch are dry and atrophied at the root, so as to have the appearance of exclamation points (!) because the shaft is thick, while the roots taper off and end in a small knob.

The disease is chronic, the patches remaining bald for months or even years, but recovery is usually complete. The appearance of fine

lanugo hairs in a patch is usually a good sign, for although these may again fall out, they are almost sure to be replaced by a thick crop. And yet relapses are very prone to occur.

Pathology.—As already noted, the hairs show atrophic changes and the root is atrophied. There is a lack of pigment in the basal layer of the rete, otherwise this is normal. The upper portions of the hair follicles are greatly dilated, while the lower parts are constricted. There is a considerable cellular infiltrate about the follicles, especially their bases, and there is also a perifollicular infiltration of small round cells and mast cells. A further account may be found in Jackson and McMurtry's book on "Diseases of the Hair."



Fig. 79.—Alopecia areata. A patch that is not as yet completely denuded.

Diagnosis.—The perfectly smooth character of the scalp, and its lack of inflammatory signs will make the diagnosis perfectly easy. The only condition that has ever given me any trouble in diagnosis is syphilitic alopecia, which may rarely be so marked as to resemble the diffused small patches of alopecia areata. Here the deciding point must be the history, other signs of syphilis, or laboratory tests.

Prognosis.—The disease is in no way dangerous to life, nor is the entire scalp apt to become bald. But the disease is very chronic and is also prone to recur, even after an apparent complete cure has taken place.

Treatment.—Good food, plenty of sleep, exercise in the open air, in fact proper hygiene in general should be rigidly enforced. The local treatment consists in the application to and just beyond the borders of the patch some stimulating and antiseptic preparation. It is always well to try different remedies on different patches, and then note the results. In my experience the best preparations have been: painting the involved area with pure carbolic acid, and swabbing off with alcohol as soon as whiteness develops; anointing the areas with one-half dram of pyrogallie acid to one ounce of vaseline; painting upon the patch a saturated solution of chrysarobin in choloform, and covering this with a layer of flexible collodion; painting upon the bald spot a solution composed of one dram of salicylic acid dissolved in an ounce of flexible collodion; using a solution composed of one dram of the oil of tar dissolved in an ounce of flexible collodion.

There are dozens of other remedies advocated; their number shows that no one is always effective.

TRICHORRHEXIS NODOSA.

Synonyms.—Trichoelasia; Nodositas crinium; Clastothrix.

Definition.—Trichorrhexis is a disease of the hair of unknown etiology, in which nodes appear along the hair shaft, the hair breaking easily at these nodes.

Occurrence.—The disease is a very rare one.

Etiology.—There are three theories, one that the nodes are due to a degeneration and swelling of the medulla that forces the cortex apart; another that it is due to the repeated mishandling of the hairs in washing and the improper drying of the hairs; and the last that the disease is an infection. Hodara¹² claims to have isolated an organism, the *Bacillus multiformis trichorrhexides*, and to have reproduced the disease with this organism, and a number of other experimenters have substantiated his claims. It has also been noted that the hairs of old shaving brushes have developed the same trouble.

Symptomatology.—As a general rule, the beard of men is the part attacked, but the hair of the head, of the pubis or of the axilla may likewise suffer. The patient first notices "little knots" upon his hairs. Upon examination there are found grayish, transparent thickening of the hair, usually occurring nearer the distal than the proximal end of the shaft. The hair is very brittle and readily fractures, usually at one of these nodes.

Pathology.—There is first a swelling of the shaft, forming the

¹² Hodara: *Monatsh. f. prakt. Dermat.*, 1894, xix, 173.

node; then a transverse fracture occurs at the node, combined with a splitting of the fibres; and lastly the end of the hair drops off.

Prognosis.—The disease is very obstinate, but usually ceases.

Treatment.—One school of dermatologists has advised antiseptic treatment, while the other school has forbidden the washing of the hairs, and has insisted upon the anointing of them with sweet almond oil, or some similar preparation, in order to keep them from becoming too dry. Some advise the frequent shaving of the hair, while still others, and perhaps the wiser, recommend no treatment whatever.

ECZEMA.

Synonyms.—Tetter; Salt rheum.

Definition.—Eczema is an inflammatory condition (catarrh) of the skin, either acute, subacute or chronic in character, caused either by external irritation or infection in persons who have certain predisposing conditions, and characterized by various types of inflammatory processes.

Occurrence.—Eczema is the commonest skin disease seen by the dermatologist; it constitutes over 18 per cent of all cutaneous afflictions. All ages, sexes and races are liable to it, and practically any portion of the body may be afflicted.

Etiology.—When one starts to consider the etiology of eczema a serious difficulty at once confronts him, namely, what is eczema? It is extremely difficult to say where dermatitis venenata leaves off and eczema begins. Many of the older dermatologists, of whom Malcolm Morris¹³ is a shining example in his introduction to the subject of eczema, hold that while dermatitis and eczema look alike, and act alike, and have the same pathology and are helped by the same remedies, yet they are different, and that the difference exists in this: "If you know the cause it is not eczema; if you do not know the cause then it is eczema." At the present time we must admit that it is impossible to differentiate between cases of irritant dermatitis and of eczema in a great many instances, for while an irritant dermatitis is supposed to clear up promptly and an eczema is supposed to be chronic and subject to relapses, it is by no means uncommon to find that an eruption started by external irritation may last almost indefinitely. We must then recognize with Knowles¹⁴ that external irritation is the starting point of many cases of the disease that we call eczema.

Next comes the question as to the part played by bacteria. Clinically certain observations are clear to us all: in the first place a typical

¹³ Morris: *Diseases of the Skin*, London, 1907.

¹⁴ Knowles: *Jour. Cutan. Dis.*, 1913, xxxi, 11.

crop of small furuncles, either large or more frequently simply follicular, accompany a great many cases of eczema, occurring in rather close proximity to the true eczema; second, a discharge of pus, from an infected ear for instance, will often cause an eruption that is indistinguishable from an acute vesicular or impetiginous eczema, and that runs a chronic course even after the ear had ceased discharging; third, the frequency with which a sycotic condition complicates the eczema; fourth, that if the isolated vesicles that sometimes arise on more or less distant parts be thoroughly cauterized no new patch will appear there; fifth, that certain of the pustular eczemas are distinctly contagious, although the others are not; sixth, that autogenous bacterins made from cultures taken from the exudates often have a very great effect in all forms of eczema except the squamous.

The bacteriological side of the question has been studied by many men including Unna,¹⁵ Gilchrist,¹⁶ Török¹⁷ and more recently by Cole.¹⁸ They all conclude that the early vesicles of eczema may be sterile, but usually contain a staphylococcus. Most unfortunately careful complement fixation tests in sufficient number have not as yet been published concerning eczema. Nor has there been any work concerning the autoinoculability of these eczemas. This branch of study needs much more attention.

Various internal conditions undoubtedly predispose towards eczema; any digestive disturbance, especially if associated with constipation, may aggravate an already existing attack, or cause a new one to arise. As Johnston's¹⁹ paper shows, there is absolutely no proof that there is any error of metabolism that is responsible. Only do we recognize that either the gouty or the diabetic are rather more prone to eczema than are normal individuals. Poor circulation is often accompanied by eczema, usually of the legs. Eczema is often found in those who have heart or kidney lesions, or varicose veins. In children disturbance of the carbohydrate balance, as shown by Towle and Talbot,²⁰ may have a very great predisposing influence. In fact any of the digestive disturbances of children may favor the development of eczema.

It seems to me that there is no real mystery concerning the etiology of eczema, and that its causes may be compared to the causes for catarrhal conditions of the nose and throat. In the first place there is a predisposing cause that lowers the resistance of the body; then

¹⁵ Unna: *Histopathology of Diseases of the Skin*.

¹⁶ Gilchrist: *Trans. Amer. Dermat. Assoc.*, 1899, xxiii, 87.

¹⁷ Török: *Annal. de dermat. et de Syphil.*, 1900, 139.

¹⁸ Cole: *Arch. f. Dermat. u. Syphil.*, 1913, cxvi, 207.

¹⁹ Johnston: *Jour. Cutan. Dis.*, 1913, xxxi, 3.

²⁰ Towle and Talbot: *Amer. Jour. Dis. of Children*, 1912, iv, 219.

comes external irritation which lowers the resistance of a particular portion of the skin; then bacteria, usually staphylococci, but also other organisms, play their part and produce the typical symptoms of eczema. In many individuals it is apparently not necessary for local irritation to play any part; the bacteria can do the work by themselves. Of special interest is the recently demonstrated fact that the epidermophyton (ringworm) can cause a typical eczema of the hands or feet. A full discussion of this problem may be found in the discussion²¹ of Johnston's and Knowle's papers before the American Dermatological Association.

Symptomatology.—Eczema shows a number of different clinical



Fig. 80.—Papular eczema of the finger that is approaching the squamous type through confluence of the individual lesions.

forms. We usually say that eczema is divided into the following groups: erythematous, papular, vesicular, pustular, squamous, verrucose, weeping and the red or rubrum. However, all of the different varieties resemble one another in certain things: they all itch, all may be associated with more or less serous oozing and all tend to become chronic.

Erythematous eczema is most common upon the face, arms and genitalia, but may occur upon any portion of the body. It is more common in adults than in children. It commences as ill-defined reddish

²¹ Discussion: Jour. Cutan. Dis., 1913, xxxi, 29.

blotches that are covered with furfuraceous scales and is usually accompanied by intense itching. There is usually some slight œdema and a slight amount of infiltration. The disease usually spreads in two ways, by peripheral extension and also by the development of new patches, perhaps at a considerable distance from the original focus. The disease may soon heal, it may develop into the typical weeping form, or it may become squamous. There is always a marked tendency for it to recur.

Papular eczema usually selects the arms, axillæ, the legs, or the



Fig. 81.—A common type of vesicular eczema that occurs in those whose hands are exposed to irritants. Note the individual vesicles at a distance from the main lesions.

back, but may develop elsewhere. It may start with very small papules, chiefly seated around the hair follicles, or the papules may be larger, 2 to 4 mm. in diameter. At first they are well-defined and discrete, but usually they soon coalesce, and then the papules cannot be distinguished, except perchance around the edges. Such plaques are spoken of as "lichenification" by the French authors. Some of the papules may be surmounted by minute vesicles. In addition to the redness of the papules there is often some erythema of the neighboring skin. There is usually considerable itching. The papular form of

eczema is apt to be very resistant to treatment, and may also recur. The itching is usually intense.



Fig. 82.—Vesiculo-squamous eczema of small extent, but of great tenacity. The Röntgen rays often act exceedingly well upon these lesions.

Vesicular eczema is heralded by an erythematous patch which burns and itches intensely. Small vesicles soon develop; they rapidly be-



Fig. 83.—A very acute case of vesiculo-pustular eczema, that speedily subsided upon the application of a mild yellow oxide of mercury ointment.

come confluent and rupture and the surface is covered by a dried mass of yellowish crusts, scabs not scales. Beneath the crusts the

exudation continues, and the itching is usually very severe. The eruption may develop upon any portion of the body, but is especially common upon the scalp of infants (where it receives the name of "milk crusts"), upon the faces of infants, around the ears of both children and adults and upon the hands. However, any part of the skin may be affected. This variety may heal, or it may become squamous. There

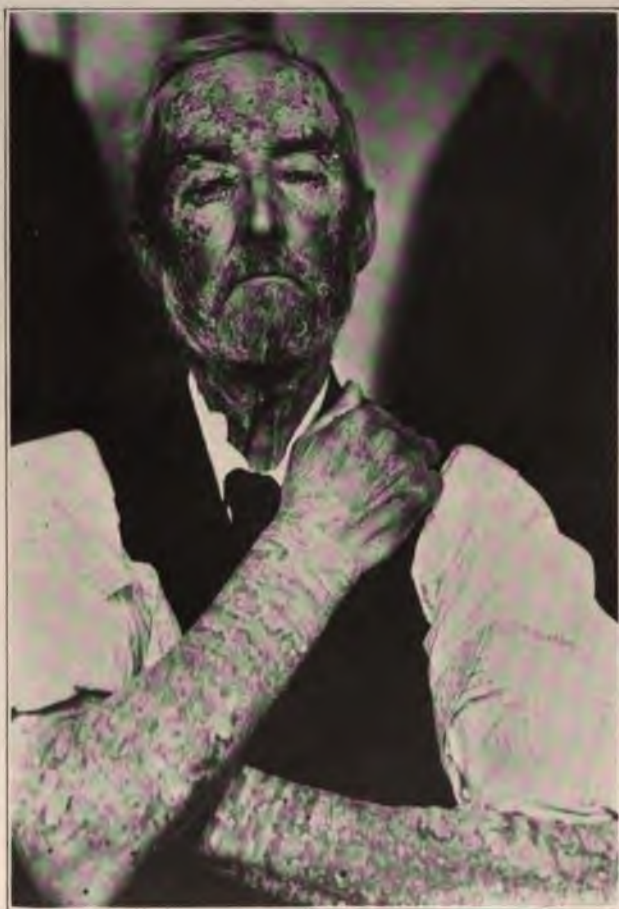


Fig. 84.—Vesiculo-squamous eczema of considerable extent, that arose rapidly and subsided slowly. (Gilchrist's case.)

is the same tendency towards recurrence as in the other varieties. Even in the other varieties of eczema there is always a great tendency for isolated vesicles to develop upon other portions of the body than the ones primarily affected.

Pustular or impetiginous eczema is common upon the scalp, espe-



Fig. 85.—Pustular eczema that arose as the result of a middle ear abscess.

cially in conjunction with pediculosis capitis; it is also common around the ears and upon the faces of poorly nourished children. The discharge is purulent rather than serous, and the itching is not as intense as in the other types. This variety is usually thought to be due to an added infection with staphylococci, but seems to me to simply express a more lowered resistance, so that the inflammation is purulent from the onset. The cases, however, are usually rather more easy to cure than are the other types of eczema.

Squamous eczema is not a primary form, but is always secondary to one of the other kinds. There are two characteristics, scaliness and induration. Sometimes one predominates and sometimes the other. In



Fig. 86.—Typical squamous eczema of the legs, secondary to varicose veins.

addition, there are often a number of weeping areas. Squamous eczema is more common upon the hands, arms, feet and legs than elsewhere, but may develop upon any of the cutaneous surfaces. Upon the palms of the hands and soles of the feet it may be associated with great keratotic thickening, and painful fissures often develop. There may be intense itching, but this does not always occur.

*Verrucose eczema*²² has already been rather fully considered under the heading of "Dermatitis Vegetans." A portion of the skin be-

²² Hazen: South. Med. Jour., 1914, vii, 710.

comes studded with papillomatous growths, usually as a sequence to a weeping condition. The itching is often very intense.

Weeping eczema, or *eczema madidans*, is simply a form in which there is a considerable amount of oozing, and is usually associated with the vesicular type.

Eczema rubrum is an exaggerated form of eczema, there being present considerable inflammation, and consequent œdema, infiltration and redness, and usually some scaling and oozing.

Eczema of special localities deserves just a word of mention. Upon the scalp we usually find either the common vesicular eczema of chil-



Fig. 87.—Squamous eczema of the soles—sometimes called “tylotic eczema.”

dren, the “milk crust,” or the impetiginous eczema associated with pediculi.

The face of babies is often affected by either the pustular or the vesicular variety, while in adults the erythematous variety is the most common.

Back of the ears the eruption is usually vesicular or pustular.

Upon the eyelids the erythematous kind is most apt to occur.

Eczema orbiculare, a ring of eczema around the mouth, is usually caused by the patients moistening their lips with their tongues; it is most common in children, and is usually either papular or squamous.

Eczema of the upper lip is frequently due to a discharge from the

nostrils, and is very common during the period when one is suffering from a cold in the head, especially if attended with nasal discharge. Usually the variety is of the erythematous type.

Eczema of the lips themselves is not common, but may occur, sometimes as the result of using an irritating tooth powder, and sometimes as the result of a spread of a facial eczema. The lesions may either be dry or weeping.

The *neck* is more apt to be affected by the papular variety than any of the others, and may become chronic due to the irritation of the collar band of the shirt.

The *hands* are the commonest site for eczema, doubtless because of the irritation to which they are exposed. Any variety of eczema may affect them, but there is a special tendency for the lesions to become



Fig. 88.—A type of vesiculo-pustular eczema that is common upon the faces of babies.

squamous, especially in those who have their hands much in water. Acute eczema may be due to ringworm.

Eczema of the nails is not uncommon, the inflammation being in the nailbed, and thus causing thickening and the development of ridges in the nail substance.

Eczema of the *palms* may have a very circumscribed edge, especially in the long standing, squamous cases. Then there may be only slight itching. This variety is sometimes very difficult to differentiate from palmar syphilis.

The *axillæ* and *groins* afford ideal breeding places for bacteria, and doubtless eczema here would be more common were it not that they are well protected from irritation. The use of the various nostrums

to prevent perspiration has caused many a case of eczema. Eczema here is usually of the papular variety, and is more marked when there is the most perspiring. The itching is often very intense.

Eczema beneath the breasts is usually seen in large women with pendulous breasts, and is more common in warm weather. It is usually erythematous, and closely related to intertrigo.

Eczema around the nipples is usually of the vesiculo-squamous type, and must not be confused with Paget's disease (cancer).

The *genitals*, especially in men, are frequently affected by the erythematous kind, and the itching is usually extremely distressing. Glycosuria must always be excluded, as the deposit of sugar from the urine will frequently cause such a condition. Unless due to diabetes the condition is very rebellious to treatment.

Anal eczema may be due to intestinal parasites, or to fissures or



Fig. 89.—Severe generalized squamous eczema that was at first accompanied by considerable edema. A pure culture of *Staphylococcus aureus* was obtained from beneath the scales in many places, and no other organism was recovered. Recovery was very speedy under simple rest and good hygiene.

other local troubles; itching is usually intense, and the disease resists treatment to a marked degree.

The *legs* are more frequently affected in those who are subject to heart or kidney trouble, or in those who have varicose veins. Poor circulation seems to be the biggest factor in these individuals.

Universal eczema is usually of the squamous type, and occurs chiefly in those who are much below par physically, and is a very distressing and stubborn condition.

Pathology.—All eczemas have certain things in common, pathologically speaking. All show a type of inflammation of the upper skin

that approaches the chronic, that is, the cellular infiltrate is chiefly composed of round and fixed tissue cells, and not of polymorphonuclears. The papillæ are swollen and œdematous, and the blood vessels are dilated and surrounded by a cellular infiltrate. The intrapapillary processes are elongated, and there are usually but a few lines of cells between the papillæ and the outside world; in other words the rete is thinned.

Erythematous eczema will first be considered. The horny layer shows thickening, and the cells still contain nuclei. The granular-layer lacks the granules of keratohyaline, and the cells seem a trifle swollen. The prickles cells are distinctly swollen, and it is often difficult to distinguish the intracellular protoplasmic bridges. The nuclei do not stain as well as usual. Over the papillæ there are not the nor-

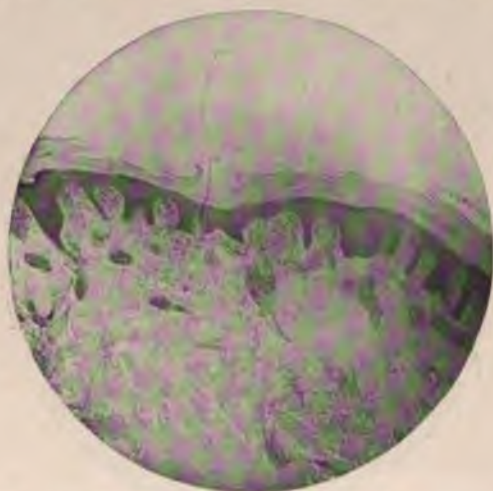


Fig. 90.—Histopathology of acute erythematous eczema.

mal number of cells, so that the vessels of the papillæ are brought nearer the surface. In some places there may be slight beginning vesiculation within the prickles layer. In places the layer is invaded by small, oblong wandering fixed-tissue cells and by small round cells. The corium, especially the papillæ, is slightly œdematous, and the blood vessels are swollen and surrounded by a moderately thick infiltrate of fixed tissue and round cells. The nuclei of the white fibers are larger than usual. The appendages are normal.

Papular eczema shows a very similar picture; the papule consists chiefly of œdema and only secondarily of infiltrating cells. There is rather more œdema than in the erythematous type, otherwise the histological picture is practically the same.

Vesicular eczema is characterized by still more intense inflammatory signs than in either of the preceding varieties. The horny layer is usually almost lacking. The cells of the granular layers are apt to lack the characteristic granules, and the squamous cells are swollen and œdematous, and it may again be difficult to see their prickles. The blood vessels of the corium are greatly swollen and there is a marked grade of perivascular infiltration, generally with small round and fixed-tissue cells; it is exceptional to see a plasma cell, and polymorphonuclears are almost entirely lacking. The vesicle forms in the prickle cell layer, being preceded by a great amount of intercellular œdema, and degenerative changes in the cells themselves. The vesicles contain a few polymorphonuclear leucocytes, usually with fragmented nuclei, but chiefly small round cells.

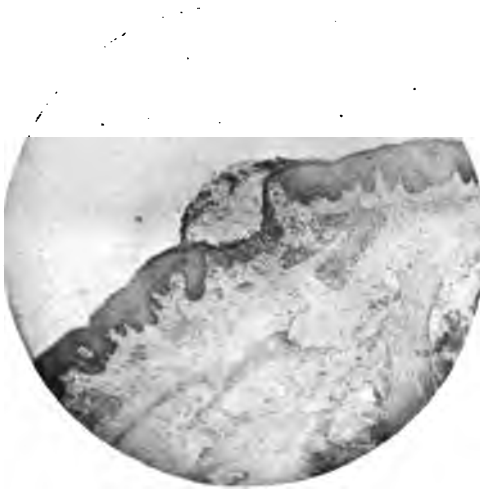


Fig. 91.—Histopathology of vesicular eczema.

Pustular eczema has a pathological picture similar to the vesicular, except that polymorphonuclears have to a large extent replaced the small round cells.

Squamous eczema shows a markedly thickened horny layer, many of the horny cells still retaining their nuclei. Otherwise the structure is very similar to the other eczemas, except that there is no acute intercellular œdema of the rete in the majority of cases. The papillæ are often markedly rounded or club-shaped instead of having their regular shape.

In *weeping eczema* the intrapapillary processes are much elongated, so that the papillæ also are longer than normal; in addition they come

very near the surface, there usually only being one layer of basal cells, one of prickle and one of granular cells between them and the surface. The vessels of the papillæ are markedly enlarged and there is considerable œdema; consequently some oozing of serum to the surface is bound to occur. In other particulars this type of eczema resembles the others.

Eczema rubrum resembles the weeping variety so far as the changes in the rete go, but the corium is also the site of some marked disturbances. In it there is considerable infiltration with small round cells, especially around the sweat ducts and in the papillæ. However, even deep down in the corium there is an intense grade of intercellular œdema and the presence of a large number of newly-formed fibroblasts, running in all directions and at all angles.



Fig. 92.—Histopathology of eczema rubrum. Note how near the papillæ come to the surface.

Diagnosis.—The diagnosis of eczema is usually rather easy; if we keep in mind certain things we should not go astray. In the first place eczema is the commonest disease of the skin; it is often roughly symmetrical in its distribution; there is frequently a mixture of types of eruption, but nearly always redness, infiltration, scaling and some oozing; a tendency for the lesions to become confluent, and usually itching or burning made worse by the application of water. Then when the chronic course and the tendency to recur are considered there should usually be no difficulty in recognizing the trouble.

Erythematous eczema may be simulated by a mild attack of erysipelas, but the constitutional disturbance in the latter malady is much more severe. Eczema is scaly and erysipelas is not, eczema

itches and erysipelas does not. There is more œdema and deep infiltration in erysipelas and the edge is better defined. Large patches of erythema multiforme may occasionally simulate erythematous eczema but are never scaly and rarely itch intensely. Intertrigo may closely resemble this type of eczema, but its location between contiguous surfaces of the skin will make the diagnosis easy. Rosacea may simulate erythematous eczema, but usually burns rather than itches, and is more chronic in its course; in addition the enlarged blood vessels can usually be recognized.

Papular eczema may be very closely imitated by the small papular syphilis, but as a general rule the differential diagnosis is easy. The lesions of syphilis are discrete, while those of eczema usually become confluent, syphilis is widespread while eczema is circumscribed, eczema itches while syphilis usually does not. However all of these signs may fail, and one have to make a very careful examination for other evidences of syphilis, always remembering that eczema not infrequently develops in syphilitic subjects.²³ It may at times be necessary to resort to laboratory tests. Scabies may simulate this variety, but the distribution should always serve to differentiate the former, except perhaps in the unusually cleanly. Lichen planus has deceived me more than once; within the past month in two cases I made the correct diagnosis (papular eczema) only by histological examination of the lesions. Usually, however, lichen planus has angular, umbilicated lesions, arranged in definite rows, and often of a violet hue. The lesions may remain discrete or become confluent. In lichen planus there are very apt to be lesions upon the buccal mucous membranes. The histology of lichen planus is distinctive. A papular dermatitis may result from the use of various external irritants: here the history must often be the deciding factor in making the diagnosis. Seborrheic dermatitis of the papular variety and occurring in the axillæ is often very difficult to distinguish from a true eczema. As a general rule in seborrheic dermatitis there is less infiltration and a deeper, almost purplish tint. Psoriasis may cause trouble, but when it is remembered that psoriasis is usually present upon the extensor surfaces, especially the elbows and knees, in greater profusion than elsewhere, that the lesions are covered by powdery white scales which leave minute bleeding spots when removed, that there is usually no itching and that the disease is usually worse in winter than in summer, there should be no difficulty in making a correct diagnosis.

Vesicular eczema can only be confused with one or two conditions. It may closely simulate dermatitis venenata, in fact it is more than

²³ Hazen: South. Med. Jour., 1913, vi, 672.

questionable if the two conditions are not analogous. As a rule in these cases it is of no importance to make a differential diagnosis, but it is of importance to find the irritating factor. A widely disseminated vesicular eczema might possibly be mistaken for dermatitis herpetiformis, but in this latter condition the vesicles are not confluent, pigmentation is often left by the healed lesions, the vesicles are larger and more distinct and the eruption is a general one. It is sometimes extremely difficult to tell a deeply-seated vesicular eczema of the fingers from pompholyx; the difficulty arises chiefly from the unsettled question as to what constitutes pompholyx. If we restrict the term to meaning only the lesions that arise upon the palms and soles there will be no difficulty in making a differentiation, but at the present time some dermatologists consider these vesicles upon the lateral sides of the fingers as eczema and some as pompholyx. Scabies should not give trouble; the vesicles are more discrete than in eczema and the distribution of the eruption should easily settle the question.

Pustular eczema and *impetigo contagiosa* are sometimes practically impossible to tell apart, unless one can find the isolated vesicles of the latter. As a general rule the lesions of impetigo are more discrete, have less secretion of a purulent nature, and are more contagious than are the lesions of eczema. Again, however, both conditions are infections and the mere giving of a name is of no particular importance.

Squamous eczema is simulated by a number of conditions, notably by psoriasis and syphilis and occasionally by lichen planus. Psoriasis is not an itching disease, the scales are white and powdery, and the lesions usually predominate upon the elbows and knees. Psoriasis very rarely affects exposed areas of the body, but when it does occur upon the palms of the hands it may be impossible to tell from eczema, except by a careful examination of the remainder of the body. Palmar and plantar syphilis of the squamous variety is always difficult to distinguish from eczema. About the only possible distinguishing features are the lack of itching in syphilis, and the fact that it may be unilateral, whereas eczema is usually bilateral. Then syphilis has a way of spreading up on the inner side of the arch of the foot that may be characteristic. The sharp edge of demarcation is characteristic of both diseases, and should never be considered as a diagnostic point in favor of syphilis. Other evidences of syphilis, either clinical or laboratory, are usually necessary in order to make a certain diagnosis. It should never be forgotten that an eczematous condition may supervene upon a syphilitic one. Old, hypertrophic lesions of lichen planus may closely simulate eczema, but are usually more sharply circumscribed, rather less scaly, and often have a violet hue. Certain diagnosis can be made by biopsy.

The verrucose form of eczema may be simulated by blastomycosis, tuberculosis verrucosa cutis, bromide eruptions and malignant conditions. Laboratory investigations will rule out the first two, the history and stopping the drug will reveal the second, while in cancer the edge is of great hardness, thus differentiating it from a simple inflammatory condition.

Prognosis.—Eczema is nearly always a chronic condition and also one that shows a great tendency to relapse. However in the vast majority of cases eczema can be temporarily cured, and in many instances permanently. In every case relief can be obtained by the patient.

Treatment.—All forms of eczema cannot be treated alike; an acute weeping eczema and a chronic indurated patch demand radically different measures.

Acute erythematous eczema should always be treated by soothing applications and the avoiding of external irritation. The same scheme of treatment applies for any acute or weeping variety of eczema.

The bowels should be kept moving, and any indigestion should be corrected. In addition to refraining from any food that does not agree with the individual, certain articles, such as pork, cabbage, candy, pastry, sweets, fish and oysters, are usually tabooed. Some advise that acid fruits, such as the grape fruit, be not eaten, and still others consider meat harmful. There is entirely too much superstition concerning the uric acid diathesis in the minds of many doctors, and the omitting of many of the above things is entirely due to this exploded theory. Meat certainly does no harm if taken in moderation, that is except in an occasional individual who has an anaphylaxis against it. Eating between meals should be absolutely stopped, however this one direction will often go far towards solving the diet problem. Plenty of water should be taken. Alcohol should be prohibited.

The patient's hygiene should be carefully regulated and a search made for any predisposing causes. Every patient who has a severe eczema should have a careful physical examination made. There should be suitable rest, suitable exercise and a general healthy mode of life.

The local treatment is also of extreme importance. In the first place no soap should touch the affected areas, secondly just as little water as possible should be employed, and in that there should be put corn starch, about one pound of the starch to ten gallons of water. The parts should be cleaned with sweet or olive oil, or if this irritates, with top milk or cream. In persons who have to do their own house work rubber gloves should be worn if the hands are affected.

Powders or lotions should always be employed, never ointments. The author usually employs calamine lotion.

R	Calamin.	3 ss	2.
	Zinci oxidi	3 ii	8.
	Zinci carbon, C.P.	3 ii	8.
	Glycerini	3 ss	2.
	Phenolis	3 ss	2.
	Aquæ calcis, q.s.	3 vi	180.

This should be used very freely, so that a crust forms, and this crust should be removed only every second or third day. The addition of fifteen grains of menthol to the above prescription may improve its antipruritic properties if the skin is unbroken. Pusey²⁴ speaks well of the following:

R	Tct. opii	3 ii	60.
	Sol. subacet. plumbi	3 ii	60.
	Zinci oxidi	3 ii	60.
	Aquæ, q.s.	O i	500.

Schamberg²⁵ likes a concentrated solution of boric acid, while some men prefer a two per cent solution of carbolic acid.

In some cases I have had excellent results with either an autogenous bacterin or with a stock bacterin composed of staphylococci. The initial dose should be about 250,000,000, and the injections should be given once a week, raising the dose about one-third each time. I have never found any internal remedy of any great value. The X-ray should be avoided in all acute eczemas.

Papular eczema is one of the hardest varieties to treat, for it is often difficult to tell whether the condition is acute enough to require soothing applications, or whether stimulating and antiseptic preparations would be the better. In all acute cases the treatment is identical with that of the erythematous variety. In the chronic cases we usually start in with the use of an ointment similar to the following:

R	Acidi salicylici	3 ss	2.
	Sulphur precipit.	3 ss	2.
	Ung. aq. ros., q.s.	3 i	30.

In the cases where there is considerable thickening we usually order an ointment of the following kind:

R	Acidi salicylici	3 i	4.
	Olei cadini	3 i	4.
	Ung. aq. ros., q.s.	3 i	30.

²⁴ Pusey: Principles and Practice of Dermatology.

²⁵ Schamberg: Diseases of the Skin and Eruptive Fevers.

In the chronic cases ointments composed of a combination of some of the following drugs are usually indicated: sulphur, ammoniated mercury, resorcinol, salicylic acid, oil of cade and tar. Bacterins do not seem as effective in this variety of eczema as in some of the others, but are well worth trying. The X-ray may be beneficial in the chronic cases. No internal medication has any specific action, although arsenic is often employed. The same rules as regards diet and washing apply here as in erythematous eczema.

An *acute weeping, vesicular eczema* should be treated just as is an erythematous eczema, but excessive caking must always be prevented. In the very acute cases the following lotion is often valuable:

R	Fl. ext. grindeliæ robust.	3 iii	12.
	Aquæ, q.s.	3 vi	180.

This should be applied to a linen cloth every few minutes, the object being to have it act as a wet dressing. The bacterins are often of extreme value.

Squamous eczema should generally be treated along the line of stimulation. If there is any oozing I usually start in with calamine lotion for a week or two and then with the following for another ten days:

R	Hydrar. oxidi flav.	gr. xv	1.
	Ung. aq. ros., q.s.	3 i	30.

If the condition is still red and raw, but yet improving, I next order:

R	Hydrar. oxidi flav.	gr. xv	1.
	Olei cadini	3 ss	2.
	Ung. aq. ros., q.s.	3 i	30.

In the frankly scaly and indurated areas the first salve ordered is:

R	Acidi salicylici	3 i	4.
	Olei cadini	3 i	4.
	Ung. aq. ros., q.s.	3 i	30.

Sometimes there is very great thickening and then we may adopt one of the following measures: paint with pure carbolic acid until the patch turns white and then wipe with alcohol; cover the patch with a mixture of one dram of salicylic acid and one ounce of flexible collodion; cover the area with the same preparation except that oil of tar is substituted for the salicylic acid; use the X-ray in one to three Holzknuecht unit doses. In one instance I have used carbon dioxide snow upon a patch with admirable results: the length of the exposure was twenty seconds and firm pressure was made. The bacterins seem to be of no value in the majority of these cases. Water

is not so injurious to these cases as to the acute ones, but is distinctly harmful to the majority. Some dermatologists are very fond of the pastes and fixed gelatine dressings for these cases, but I must confess that I have never been much impressed by them.

Eczema rubrum can usually best be treated by an ointment that is similar to the following:

R	Olei cadini	3 i	4.
	Hydrar. oxidl flav.	gr. xv	1.
	Ung. aq. ros., q.s.	3 i	30.

Where there is much oozing lotions must be employed at first. Otherwise the treatment is similar to that of squamous eczema.

In treating an *acute weeping eczema* of the face in children I always employ either the calamine lotion or a mild yellow oxide of mercury ointment. In the late, chronic cases, stimulating remedies are demanded. *Pustular eczema*, or weeping eczema back of the ears is best treated with the yellow oxide, usually about 15 grains to the ounce. Eczema of the eyelids requires a weak preparation, either a saturated solution of boric acid or 5 grains of the yellow oxide. The orbicular eczema is very difficult to treat until the child refrains from licking it. An ointment containing quinine or aloes is useful at the start, for it will tend to discourage the licking habit. Eczema of other portions of the body can be treated according to the lines already laid down.

Eczema in the negro race has a few peculiarities. In a study of 2,000 consecutive cases of skin disease in the negro and an equal number in the white, I found that the different types occurred in the following proportions:

	Whites	Blacks
Eczema erythematosum	58	17
Eczema folliculare	6	9
Eczema impetiginosum	22	12
Eczema papulosum	70	71
Eczema madidans	64	20
Eczema rubrum	14	5
Eczema vesiculosum	78	24
Eczema squamosum	78	75
Eczema verrucosus	4
	<hr/> 390	<hr/> 237

It will be noted that the papular and squamous varieties are the commonest in the colored race, while the erythematous and vesicular varieties are relatively few in number. Of particular interest is a diffuse papular variety of eczema in which the lesions do not become

confluent, and which is most apt to occur upon the arms, and to some extent upon the back. Laundresses seem to be more affected than those engaged in any other occupation. This form is often extremely hard to tell from a small papular syphilis, for syphilis in the negro often itches. Other evidences of syphilis, from either the clinical or laboratory standpoint, may be required before the diagnosis is settled.

ACNITIS.

Synonyms.—Acne telangiectodes; Hydradenitis destruens suppurativa; Acne agminata; Acne luposa; Lupus miliaris; Colloid degeneration of the skin; Varus nodularis; Acne necrotica.

Definition.—Acnitis is a disease of unknown etiology, characterized by necrosis in the corium, and resultant scar formation.

Occurrence.—While the condition is not common, it certainly is not as rare as has been generally believed, for many cases are doubtless overlooked.

Etiology.—It has been rather generally believed that the disease was a manifestation of tuberculosis, but I must confess that this theory seems based upon totally insufficient evidence, and that it is supported by neither the clinical nor pathological findings. So many of the cases resemble aberrant forms of acne or of some deep, slow infection that I cannot help feeling that it is probably caused by external infection with an organism of greatly lowered pathogenic properties.

Symptomatology.—The lesions are located upon the face, being usually most numerous upon the cheeks, nose and chin, with a few upon the forehead. The lesions are usually rather numerous, varying in number from ten to a hundred. The lesions vary in diameter from 1 to 10 millimeters, and are usually discrete. The lesions at first appear as deep seated papules, the skin over which shows no changes. Later a scale forms, which when removed shows an underlying cheesy-like plug. Some of the cases run a very acute course and some last for years.

Pathology.—The pathology of this disease has recently been most carefully explained by Ketron,²⁶ who has definitely shown that the earliest lesions are located in the corium and that they bear no relationship to either the hair follicles or to the sebaceous glands, except as they involve them in the act of expanding. The lesions consist of a finely granular mass, surrounding which is a mass of epithelioid

²⁶ Ketron: Bull. Johns Hopkins Hospital, April, 1915.

cells and a few giant and small round cells. Ketron is of the opinion that the disease originates in the small blood vessels.

Diagnosis.—The condition must be diagnosed from acne vulgaris, rosacea, pustular syphilis, small-pox, and a drug-rash. From the latter three it can be told by its limited distribution and its chronicity. Blackheads are usually absent, and the patients are rather old for acne vulgaris, while the dilatation of the superficial blood vessels is not marked as in rosacea.

Prognosis.—The disease is often very intractable, but can usually be helped.

Treatment.—The X-ray treatment has probably given the best results, although some observers have reported good results from the use of autogenous bacterins, for the staphylococcus can usually be cultivated from the lesions. Ionization should be useful.

ACNE VARIOLOFORMIS.

Synonyms.—Frontal acne; Acne necrotica; Lupoid acne.

Definition.—Acne varioloformis is an inflammatory disease of an unknown etiology, characterized by pustules of the upper part of the forehead, which leave depressed scars upon healing.

Occurrence.—The disease is unusual.

Etiology.—It is believed by many that the disease is a manifestation of tuberculosis, although organisms are lacking. In two cases I have grown the *Staphylococcus albus* in pure culture, although this may be a secondary invader. In some cases, at least, the case resembles an infection of a chronic nature.

Symptomatology.—The lesions are situated upon the forehead, just below the hair margin. There are from ten to twenty deep-seated papules that sink in the center, sometimes becoming frankly pustular, with the subsequent development of variola-like scars. The lesions are very chronic.

Pathology.—The pathological findings are similar to those in acnitis.

Prognosis.—The lesions are usually resistant to treatment.

Treatment.—Some of the cases are much improved by a sulphur ointment. In the majority of instances, however, treatment should be the same as for acnitis.

CHAPTER XIV.

DISEASES DUE TO SYSTEMIC INFECTION WITH SPIROCHÆTES.

SYPHILIS.

Synonyms.—Lues; Pox; Dry pox.

Definition.—Syphilis is a chronic infection with the *Treponema pallidum*, and characterized by lesions in any portion of the body.

Occurrence.—Syphilis is a very common disease, constituting nearly ten per cent of all diseases for which the dermatologist is consulted. It has been estimated that nearly one-eighth of the adult population of France is syphilitic. The disease is encountered in all ages and sexes, races and stations of life. It has traveled wherever man has set his foot. And yet this spread is comparatively recent; it was not until the end of the fifteenth century that syphilis made its first inroads in Europe. For this reason it is commonly believed that syphilis was originally an American disease, and that it was taken back to Europe by the sailors of Columbus. But this has never been proven. Bloch's¹ paper upon the history of syphilis is admirable.

Etiology.—The causal organism is the *Treponema pallidum*, formerly called the *Spirochæte pallida*. This organism was discovered by Schaudinn and Hoffmann² in 1905, and the disease has been reproduced experimentally with the organism.³ The organism is of corkscrew shape with pointed ends, its length being from 4 to 10 microns, and there usually being eight to ten spirals. It is very motile. As yet we know nothing concerning the life history of the parasite. McDonagh⁴ claims that the form as we know it is only the male gamete of a sporozoal parasite, but his observations have not found general acceptance.

Syphilis is acquired congenitally, that is through placental infection, and in various ways by direct inoculation. Far the commonest way is through sexual intercourse with an infected individual who has genital lesions, and yet infection of the genitals has taken place when no syphilitic lesions were visible upon the partner. In acquired

¹ Bloch: *System of Syphilis*, Power and Murphy, 1908, 1, 3.

² Schaudinn and Hoffmann: *Deut. Med. Wchnschr.*, May 4, 1905.

³ Metchnikoff and Roux: *Ann. de l'Institut. Pasteur*, Nov. 25, 1905.

⁴ McDonagh: *Brit. Jour. Dermat.*, 1912, xxiv, 381.

syphilis from ninety-three to ninety-five per cent of all chancres are upon the genitals: the remainder are located upon other portions of the body and are spoken of as extragenital chancres. They may be innocently acquired or they may arise through indulgence in perverted sexual practices. The commonest are the chancres of the lips, which usually arise from kissing an infected person.⁵ It is perfectly possible for chancres to arise as the result of using an infected intermediate agent of some sort, as a pipe, razor, towel, etc. While chancres derived in this way are rare, nevertheless they do occur. Physicians, nurses and midwives not infrequently acquire chancres of the hands as the result of their work, and wet nurses may become infected from the children they suckle. The commonest mode of innocent infection is where a wife becomes infected from her husband, or vice versa. It is usually estimated that about twenty per cent of all syphilitic



Fig. 93.—*Treponema* of syphilis as seen under a dark field illuminator.

infections are innocently acquired, that is, not as the result of illicit sexual intercourse. Bulkley⁶ has written an excellent little book upon the subject.

Even at the present time it is a bit uncertain as to the length of time that an infected individual is dangerous to his associates. The chancre and the secondary lesions swarm with spirochaetes, and even in as late stages as *tabes dorsalis* the organisms have been found by Noguchi⁷ and others. I am sure that I know of at least two cases where

⁵ Schamberg: *Jour. Amer. Med. Assn.*, 1911, lvii, 783.

⁶ Bulkley: *Syphilis in the Innocent*, New York, 1894.

⁷ Noguchi: *Jour. Amer. Med. Assn.*, 1913, lxi, 85.

a syphilitic infected his partner over twenty years after his chancre. It is usually considered that a syphilitic is not dangerous after five or six years, but I feel very strongly that we are not safe in giving permission for a man to marry after such a short interval.

In dealing with the mechanism of congenital syphilis a number of facts are now quite definitely established. In the first place infection of the child takes place through the placenta of the mother. It was once believed that a healthy mother could bear an infected child, and that if this took place she would be immune to syphilis for the rest of her days (Colles' law). But we know that these mothers are infected, and the infection is simply latent, not active. It was also once thought that if a mother with secondary syphilis bore a healthy child it would also be immune to syphilis (Profeta's law); but again laboratory investigations have shown that the child usually has latent syphilis.

A break in the skin or mucous membrane is necessary for the entrance of the treponema: such minute breaks as to escape observation are very common during sexual intercourse. Possibly circumcision prevents such abraisons: at all events those who have been circumcised are not as apt to acquire syphilis as are the uncircumcised.

The period of incubation is rather long, usually from four to seven weeks. Hutchinson¹ is a special believer in the long periods.

Symptomatology.—For convenience syphilis is still roughly divided into three periods—the primary, or stage of the chancre; the secondary, or stage of the general invasion of the parasite; and the tertiary, or stage of late local infections. Some also add a quaternary stage, to express the time for the development of late lesions, such as tabes dorsalis, dementia paralytica, etc. Still many other excellent observers hold that syphilis should be divided into but two stages, the early and the late. I prefer to stick to the division into three stages, at least for teaching purposes.

Primary Stage.—The primary stage of syphilis includes the chancre and the subsequent local glandular enlargement. As already indicated, over ninety per cent of all chancres are located upon the external genitals. In the male the chancre is most apt to be located in the coronal sulcus, next in frequency it develops in one of the small fossæ upon either side of the frenum. It may also develop upon the glans, upon the body of the penis, or even within the urethra. There are three chief varieties, the erosive, the ulcerative and the papular. All have certain characteristics in common: in the first place they are usually painless, but itch a trifle; in the second place they are

¹ Hutchinson: Syphilis, New York, 1910.

usually indurated, both beneath and at the edges; the top is usually raw and exudes a serous fluid; they are usually single but in nearly ten per cent of the cases may be multiple. In diameter they vary from three millimeters to nearly two centimeters.

In women about half of the lesions occur upon the labia majora and the majority of the others upon either the labia minora or the fourchette, but the cervix is not infrequently the seat, in 13 out of Fournier's 239 cases. Chancres in women resemble those in men, but in certain instances they may be accompanied by very intense œdema of the parts.

According to Kingsbury,⁹ Fournier found that extragenital lesions constituted 7 per cent of all chancres, and that they occurred as follows:

Lip	567 cases
Tongue	75 cases
Tonsil	69 cases
Gums	11 cases
Soft palate	4 cases
Buccal side cheeks	1 case
Chin	54 cases
Cheeks	24 cases
Eyelids	21 cases
Nose	18 cases
Forehead	2 cases
Scalp	3 cases
Arm and hand	78 cases
Anus	77 cases
Breast	59 cases
Trunk	33 cases
Leg	14 cases
Neck	14 cases

The extragenital lesions are apt to be very much larger than the genital ones: they are usually ulcerative, and are covered by brownish crusts: they are frequently two or three centimeters in diameter, and often markedly resemble a roll-edge rodent ulcer. In special localities these chancres may have special forms: all are well described by Kingsbury.

Glandular enlargement usually arises within two or three weeks of the initial appearance of the chancre, sometimes sooner. The glands which drain the part may be small, discrete and hard, or they may be fairly large. This lymphatic enlargement is almost constant, but occasionally does not appear.

Secondary Stage.—In from three to ten weeks after the development of the chancre a more or less generalized rash is noted: this is

⁹ Kingsbury: *Dermochromes*, New York, 1913.

often accompanied by joint pains, sore throat and mouth, alopecia, more or less general glandular enlargement and occasionally by very severe constitutional disturbances, occasionally ending in death.



Fig. 94.—Chancre of the lip of five weeks' duration. (Gilechrist's case.)



Fig. 95.—Chancre of the chin. (Collection of Dr. Gilechrist.)

A new classification for the eruptions of acquired syphilis has recently been suggested by George Henry Fox,¹⁰ and adopted by the

¹⁰ Fox: Jour. Cutan. Dis., 1913, xxxi, 224.

American Dermatological Association. I shall use it, with two slight additions.

EARLY		
Forms	Varieties	Descriptive adjectives
Macular	Roseolar	Large, small.
	Annular	
	Vitiliginoid	
Maculopapular		Wheal-like, annular.
Papular	Milliary	Disseminate, corymbose, annular.
	Lenticular	Disseminate, corymbose, annular, hypertrophic, confluent, squamous.
	Discoid	Disseminated, moist, annular, confluent, squamous.
Papulopustular		
Pustular	Acuminate	Crustaceous.
	Obtuse	Crustaceous.
	Ecthymoid	Crustaceous, rupial, ulcerative.
LATE		
Forms	Varieties	Descriptive adjectives
Nodular	Agminate	Confluent, squamous, cicatricial.
	Circinate	Squamous, crustaceous, ulcerative.
	Serpiginous	Crustaceous, ulcerative, cicatricial.
Squamous	Diffuse	
	Circinate	
Gummous	Diffuse	Verrucous, crustaceous, rupial, ulcerative.
	Tuberous	Ulcerative, cicatricial.

The ordinary macular syphilis is probably the commonest form of secondary syphilis in the whites. These roseolar spots may be either large or small, with all transitional stages. They may be so faint in color that it requires an excellent light to see them, or they may be a dark purplish-red. The small ones are apt to be light in color, and the large ones of a darker color. They are usually more prevalent upon the trunk and limbs than upon the face. As a general rule they give no subjective disturbances.

The annular syphilides of a macular character must be sharply

divided into two kinds, the instances where macular lesions become annular, and the erythema multiforme-like lesions, the "neurosyphilides" of Unna.¹¹ The former are simply modifications of the roseolar lesions, but the latter are more apt to come on after the infection has existed for several years, to be sharply limited to a small portion of the cutaneous surface, and not to show the characteristic histopathology of syphilides. Unna believes that they are due to nerve lesions.



Fig. 96.—Small roseolar (macular) syphilis of one week's duration. There is also a chancre upon the chin. (Gilchrist's case.)

The vitiligoid lesions develop upon the neck, nearly always of women. There are present whitish macules, surrounded by a pigmented area. Some have thought that they represent faded syphilitic spots, but this is apparently not always true. They vary from one to four centimeters in diameter, are not very well-defined, and last for a considerable time.

¹¹ Unna: Histopathology of Diseases of the Skin.

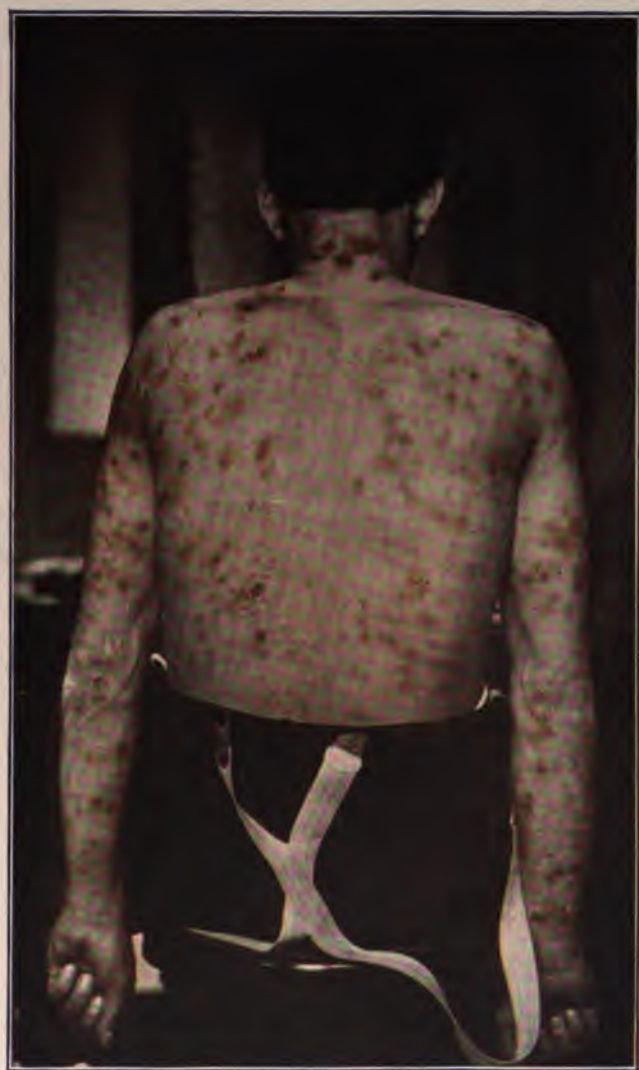


Fig. 97.—Large roseolar (macular) syphilis of two months' duration. There is some pigment deposit.

The maculo-papular lesions are of two varieties, the ordinary wheal-like lesions, and the annular ones. The former chiefly affect the trunk and limbs. They are of rather a pale pinkish color, and are usually oval in shape, well-defined, and about one centimeter in length. They closely resemble the wheals of urticaria. The annular lesions are simply modifications of these, and occur chiefly in the negro.



Fig. 98.—A maculo-papular syphilide.

The miliary papular lesions are seated at the mouths of the hair follicles. They are rare in whites, but not infrequent in negroes. The individual lesions are widespread, although the face is often spared. The lesions are conical in shape, and vary in diameter from one to three millimeters. There is a tendency for the lesions to be grouped, although this is by no means always true.

When corymbose there is usually lacking the central "bull's eye," and the lesions simply form a large circle.

The annular lesions are of two kinds, first where one papule spreads peripherally and clears up in the center, and secondly where a number of follicular papules form a ring.

The term "lenticular" means a solid raised lesion, either acuminate, rounded or semiglobular. They are quite distinct from the discoid lesions, which are flat.

These lenticular papules are often widely disseminated over the



Fig. 99.—A military, disseminated, papular syphilide.

entire body, the face not being spared. They vary in size from four millimeters to a centimeter, or even more. In color they are either a pale or fairly deep red, and often they have a few central scales. They tend to form in groups, and not to be absolutely evenly distributed.

When corymbose there is one large central papule, or bull's eye, around which are closely grouped many smaller lesions, sometimes so closely as to form a solid mass. These lesions are rather rare.

Lenticular papules occasionally become annular, at least in the negro, although not so commonly as the discoid or flat papules. The center may clear up entirely as the peripheral spreading takes place, or it may simply sink and become covered by thick whitish scales.

Hypertrophic rounded tumors, or large frambæsi-form lesions may develop from these lenticular lesions. Usually they are upon the face, but they may also occur around the genitalia, in the axillæ or

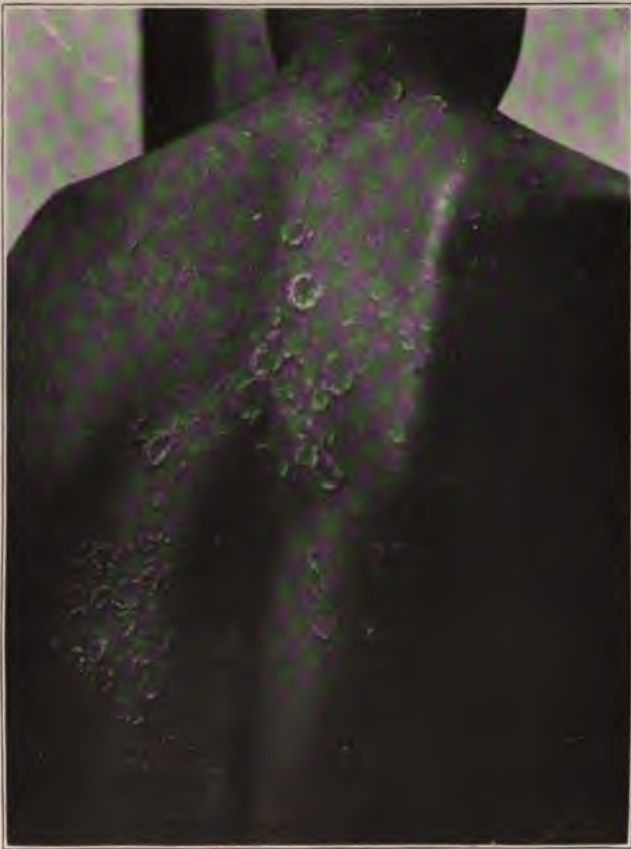


Fig. 100.—A miliary, papular syphilide that has become annular.

around the breasts. Very rarely a number of the papules become confluent, with the formation of a large superficial nodule.

The squamous variety is rare: while all of the lesions scale more or less, especially when resolving, yet occasionally there is very profuse formation of scales from the onset. These are closely adherent and are rather fine, of a whitish color.

The discoid lesions are flat, and have very little "body" to them. At

times they are disseminated as such over the entire body and face, but they are more apt to be circumscribed in their location. They are also very apt to be scaly.

The moist lesions form the typical condylomata. These lesions are usually situated around the genitalia and anus, and occasionally beneath the breasts or in the axillæ. They are much more common in women than in men, and in negroes than in whites. A well-developed condylomata is about one centimeter in diameter, is sharply raised



Fig. 101.—A lenticular, disseminate syphilide (semiglobular papular).

from the skin, and has a flat, smooth, moist top, and is of a pale grayish color.

The annular lesions are more apt to occur in negroes than in whites. They are especially common around the angles of the mouth and eyes, but may appear anywhere upon the surface, even upon the mucous membranes. In size they vary from one centimeter to ten or even fifteen centimeters. They may be ringed, or they may be scroll-like, and often there are rings within rings. The edge is raised and covered by whitish scales, and may be broken or continuous. The

center may resemble normal skin, it may be pigmented or it may be depigmented. At times the center is simply depressed and covered by thick white crusts. These annular lesions are very common in the colored as both Howard Fox¹² and I¹³ have pointed out.

The discoid lesions may at times coalesce so as to form a large plaque, usually a dark red color, and apt to be upon the face.



Fig. 102.—Large lenticular, disseminate syphilide.

At times the lesions may become so scaly in a few weeks as to closely resemble psoriasis. These lesions must be sharply differentiated from the late squamous syphilides, which affect the palms and soles.

The papulopustular lesions are simply acuminate or rounded papules in which suppuration has taken place. Not all papules are thus

¹² Fox: Jour. Cutan. Dis., 1908, xxvi, 67, 109.

¹³ Hazen: Jour. Cutan. Dis., 1913, xxxi, 148.



Fig. 103.—Lenticular hypertrophic (framboesiform) syphilide.



Fig. 104.—Discoid, disseminate syphilide (small flat papule).

affected: usually only a small percentage of them are. These lesions are very much commoner in negroes than in whites.

The acuminate pustular lesions may have started as papules, or they may have been pustules almost from the onset. They are common in the colored race, and may be very superficial or rather more deeply-seated. They affect all portions of the body, but are nearly always well marked upon the thighs.

In the obtuse lesions there is a fairly large, more or less hemispherical papule that softens in the center, with the formation of pus, and sometimes of a considerable crust.

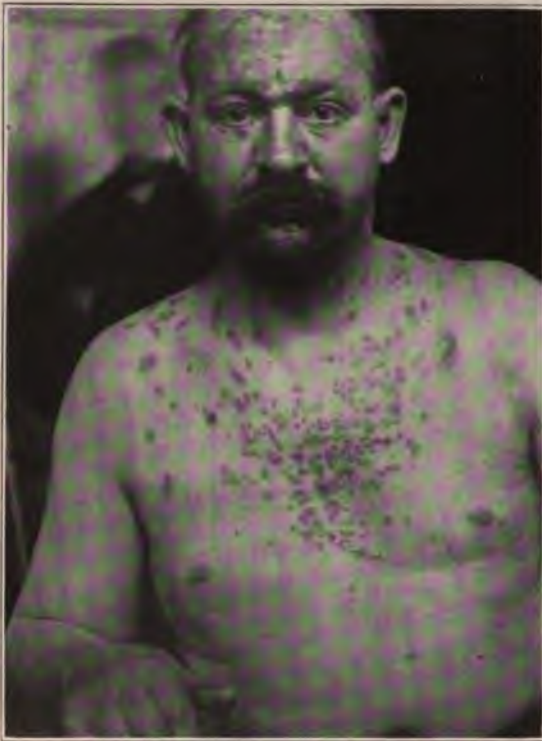


Fig. 105.—Large, discoid, disseminate syphilide (large flat papule).

In the ecthymoid lesions there are depressed ulcers, covered by crusts of varying thicknesses: when the crusts resemble an oyster shell they are spoken of as rupia. Ordinarily, however, the crusts resemble those seen in impetigo contagiosa, but are rather more adherent. When removed it will be seen that there is an underlying clean cut, rather deeply punched out ulcer.

In addition to the cutaneous manifestations, the vast majority of

recent syphilitics have joint pains, perhaps not severe, but nevertheless definite pains. This may go on to true articular swelling, or may subside in a few days. Backache and headache are also common. It



Fig. 106.—Moist, discoid syphilide (condylomata).

is common to see mucous patches, usually upon the inner part of the vermillion surfaces of the lips, especially near the angles of the

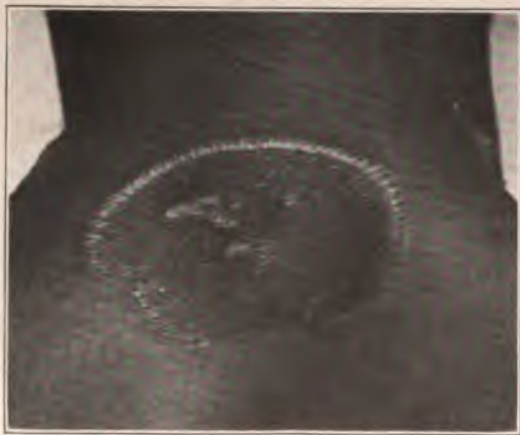


Fig. 107.—Discoid, annular syphilide. (Gilchrist's case.)

mouth, but also upon any portion of the buccal mucous membrane. These lesions vary in size from three or four millimeters to as many centimeters, are sharply-defined, covered by a gray necrotic mem-

brane, and are usually not surrounded by a marked inflammatory areola. They may or may not be painful. As a general rule they do



Fig. 108.—Discoid, annular syphilide. (Collection of Dr. Gilchrist.)



Fig. 109.—Discoid, annular syphilide.

not come on as soon as the cutaneous eruption, and are apt to be very chronic. Marked alopecia is not as common as the majority of

physicians believe: it certainly does not occur in over 10 per cent of the cases, although in about 25 per cent of the recent infections the patients complain that the hair is falling more rapidly than usual.

Glandular enlargement is pretty constant. In a careful study Friedlander¹⁴ comes to the following conclusions: that there is a universal glandular enlargement in syphilis, that the enlargement of certain groups of glands is more important than that of others, and



Fig. 110.—Discoid, annular syphilide.

that they rank in the following order: epitrochlear, occipital and posterior cervical; that the proportion of enlarged glands decreases in direct ratio with the age of the infection; that bilateral glandular enlargements are of more significance than are unilateral. To these observations I should like to add that the submammary glands are of great importance, although not often felt for, and that too much

¹⁴ Friedlander: Jour. Cutan. Dis., 1912, xxx, 14.

stress should not be put upon the presence of enlarged epitrochlear glands as they may arise from any infectious conditions of the hands or forearms. Nearly all negroes have most of their glands enlarged even when they do not have syphilis: but in syphilis the gland enlargement is apt to be very marked, and true lymphomata are not especially rare.

Iritis develops in a fair proportion of cases, and may be serious. The constitutional symptoms are of various kinds: in some instances there is no systemic disturbance, but as a general rule the patients feel weak and languid, and there may be fever, rarely over 100, but sometimes running high and more or less irregularly. Some patients suffer from digestive disturbances, and an occasional case will have



Fig. 111.—Discoid, squamous syphilide.

severe vomiting for a time. In a few instances acute yellow atrophy of the liver has developed and death ensued.

The Tertiary Lesions or the late lesions are usually more localized than are the early lesions, and may occur in any organ in the body. They rarely develop before the end of the second year after the infection. At this point it is well to emphasize the long latent periods of syphilis: all dermatologists have seen late lesions develop from ten to twenty years after the date of the original infection, although during this period there have been no evidences whatever of syphilis.

Nodular syphilis is the same thing as the "tubercular syphilis" of the text books and earlier writers. Curiously many students and physicians have become imbued with the mistaken idea that tubercular syphilis is a combination of tuberculosis and syphilis, hence it seems better to drop the term "tubercular."

The agminate lesions are the rounded or conical papules or nod-

ules of late syphilis. When they first appear they may be discrete, but they usually run together to form a patch or raised nodule. These lesions are most common upon the face and limbs, but frequently develop upon the trunk as well. They vary in size at the onset from 4 mm. to 1 cm. in diameter, but when confluent may be



Fig. 112.—Discoid, squamous syphilide, at first mistaken for psoriasis. (Collection of Dr. Robert G. Washburn.)

four or five centimeters in size. These lesions may become covered by heavy scales and are then known as squamous. They may resolve spontaneously with or without scar formation: when scars are left they are known as cicatricial lesions.

It hardly seems worth while to separate the circinate and serpiginous lesions. Both consist primarily of agminate lesions, that extend peripherally or by the formation of new lesions so as to form round or serpiginous patches that may attain a diameter of from four to ten or twelve inches. They are most common upon the limbs and body. These patches usually clear up in the center, with or without the formation of scar tissue. Ulceration may or may not



Fig. 113.—Agminate, pustular syphilide of a very superficial type.

take place at the edge. The course is always extremely slow, and the lesions are usually painless.

The squamous lesions occur primarily upon the palms and soles: they are doubtless primarily nodular, but the thickness of the skin makes them appear squamous. These lesions usually come on late in the course of syphilis, but may occur as early as one year after in-

fection. At first there are a number of isolated thickened patches, usually in the lines; then some scaling and cracking occurs, and the patches extend so that they usually become confluent. The edge is well-defined, and there may occasionally be ulceration at the border. The color is a deep red, and there are some whitish overlying scales. The lesions develop very slowly and are exceedingly rebellious to treatment. They are always difficult to tell from eczema.

The gummous lesions are the true gummata of the skin. Gummata are probably most common upon the upper third of the lower leg, especially upon the anterior and outer aspects, but also arise with



Fig. 114.—Ecthymoid, ulcerative pustular syphilide. Three months after appearance of the chancre.

great frequency upon the scalp, forehead, arms and body; in fact, practically anywhere. There may be only one lesion, or there may be a dozen or more. A gumma commences as a deep-seated node that is inflammatory in appearance, but only slightly painful. In the course of a week or ten days it has usually made its way to the surface, when central necrosis takes place, with the formation of a deep, punched out ulcer, that at first is under a centimeter in diameter, but that may become much larger. The ulcer is usually round, and the walls extend at right angles to the skin, which does not overhang. There is very little induration in the majority of cases, the base is usually

fairly clean, and there is but little discharge unless secondary infection occurs. At times these lesions are rather shallow, and are cov-



Fig. 115.—Mucous patches.

ered by thick crusts that are laminated like oyster shells; they are then called rupial lesions. Occasionally the lesions become distinctly verrucose, but this is rare.



Fig. 116.—Syphilitic alopecia.

The tubercous gummata develop more superficially than do the typical gummata, and are especially common upon the face. They

develop into patches that may be an inch or more in diameter. In the negro the follicular openings are frequently very marked. These



Fig. 117.—Agminate, nodular syphilide.

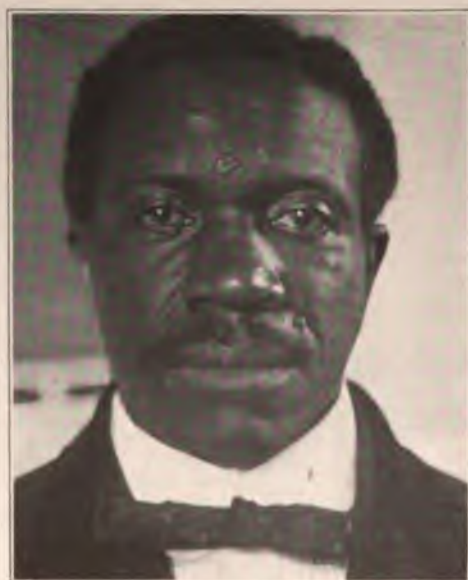


Fig. 118.—Agminate, nodular syphilide, diagnosed as leprosy by some observers. This case was absolutely intractable to treatment, although he received nearly twenty injections of salvarsan, and eventually died from brain involvement.

lesions may persist for some years, but usually they break down within six months.

In addition to the cutaneous lesions there are certain other signs of syphilis that are often seen in the course of a routine examination in a dermatological dispensary.

Glandular enlargement is not so constant as in the secondary stage, but is often present, especially in the negroes. Mucous patches frequently occur, and ulcerations of the throat are common: it is not rare to find the uvula destroyed or pulled out of place by scar formation, and perforations of the soft palate are often seen. It is rather surprising how little trouble some of the extensive throat lesions cause the patient. Condylomata sometimes occur in late syph-



Fig. 119.—Agminate, confluent, nodular syphilide. (Collection of Dr. Gilchrist.)

ilis, but seem to be rare after the infection has persisted for eight years. Joint pains, backache and headache are not infrequent, and gummatous periostitis is often seen, especially in the tibia and skull bones. Enlargement of the sterno-clavicular articular is sometimes met with. Gummata of the testicles are common, especially in negroes. Iritis may be encountered. In addition to these comparatively superficial lesions there are a host of others that are caused by syphilis. The circulatory system is often attacked, and there may result aneurism, aortic insufficiency and high blood pressure from thickened arteries. Gummata of the kidneys may develop. The liver often suffers, gummata there are not as rare as has been thought. The digestive tract is not often affected, but may be. The nervous

system may suffer very severely, even from a very early date. Not only may meningitis and gummata of the brain occur, but also aneurisms of the smaller or larger arteries supplying the brain substance, and the rupture of these can induce various types of paralysis. Tabes dorsalis and general paresis are the results of syphilis.



Fig. 120.—Serpiginous, cicatricial, nodular syphilide. (Collection of Dr. Richard L. Sutton.)

White and Nichols both think that they may be due to special strains of spirochæte.

Congenital Syphilis.—As has already been stated this type of syphilis is due to an infection of the placenta from the mother; the child does not have syphilis unless the mother has it also.

There are two different types of congenital syphilis, the first being the variety in which the affection manifests itself soon after birth, and

the variety in which there are no clinical manifestations for many years, possibly for even twenty.

As a general rule the syphilitic child is born without an eruption,



Fig. 121.—Squamous syphilide of palm, ten years after infection.



Fig. 122.—Squamous syphilide of palm.

and remains clean for a period varying from three weeks to three months, usually nearer the former than the latter time according to

Miller.¹⁵ In early syphilis there are the following symptoms in order of their frequency: skin eruption 74%; fissures of the lips, angles of the mouth and anus 70%; rhinitis 58%; ulcers of the hard palate 52%; ulcers of tongue 27%; paronychia 23%; lymphadenitis 29%; laryngitis 17%; and pseudoparalysis of the extremities in 7%. The eruption is usually maculopapular, but may assume any of the other manifestations of secondary syphilis. The child is usually badly nourished and fretful, and the facies may be characteristic—a high, bulging, prominent forehead and a depressed bridge to the nose. The digestion is usually seriously interfered with and dentition is late. Mucous patches may develop about the mouth. Rhinitis is so



Fig. 123.—Ulcerative, gummatous syphilids.

common among the poorer classes of children that very little emphasis should be laid upon it. Radiating fissures from the angles of the mouth or from the anus are characteristic. The eruption is more apt to be pronounced upon the palms and soles and upon the buttocks. One special type of eruption is the bullous, the "syphilitic pemphigus" of some authors. These blisters arise upon any portion of the body, but are probably most common upon the ankles and wrists: they arise from non-inflammatory skin, may reach a diameter of well over an inch, and do not rupture for some little time. In

¹⁵ Miller: *Jahrbuch f. Kinderheilkunde*, 1888, xxvii, 359.

negro children the annular variety of eruption is common. Glandular enlargement is not so constant as in the cases of acquired lues, but in a series of twenty-five I found the epitrochlear glands enlarged in every instance, and am inclined to put considerable stress upon these findings.

In some instances the child dies early, either an intercurrent infection or digestive disturbances being responsible. In many cases, however, the eruption disappears just as do the secondaries of acquired lues, and latter some of the gummatous manifestations exhibit themselves. In other instances there may be either no early evidences, or such slight lesions that they are overlooked, and gummata develop at an age of from one to four years.



Fig. 124.—Ulcerative, gummous syphilide.

There is a comparatively large group of cases in which none of the evidences of syphilis manifest themselves until the child has approached puberty, or possibly the age of twenty, and then gummatous lesions suddenly appear. Fournier¹⁶ has called special attention to this group. Especially in this late group of cases do we find three common afflictions: first, deafness, usually due to internal ear or auditory nerve changes; second, the characteristic interstitial keratitis; and third, Hutchinson's teeth,¹⁷ a notching of the upper

¹⁶ Fournier: Congenital Syphilis.

¹⁷ Hutchinson: Syphilis.

middle incisors. This form of tooth deformity is never found in the first set of teeth. It is not absolutely characteristic of syphilis.

In summing up the lesions of congenital syphilis we may say that they are in every way comparable to the lesions of the acquired form

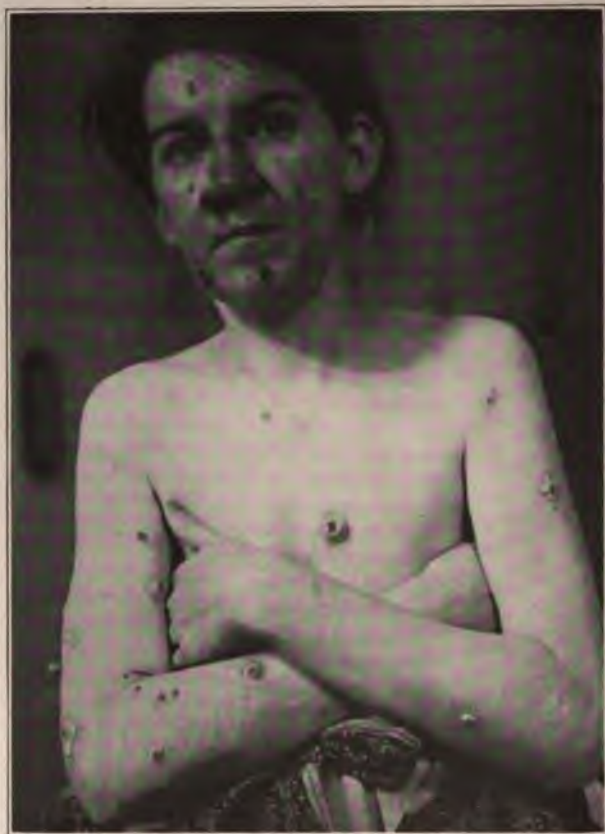


Fig. 125.—Rupial, diffuse, gummous syphilide. (Collection of Dr. Robert G. Washburn.)

of the disease, the chief difference being that bullous lesions do not occur in the latter type.

Pathology.¹⁸—In a work of this kind it is manifestly impossible to give any more than a brief summary of the pathological findings as related to the cutaneous lesions.

It is usually impossible to accurately diagnose a chancre from microscopical study, unless one stains for the causal organisms. The

¹⁸ Fordyce: Jour. Amer. Med. Assn., 1907, xlix, 462.

general picture is that of a closely packed mass of lymphocytes, with some evidences of chronic inflammatory changes.

In the secondary lesions the epidermis is usually a bit thicker than

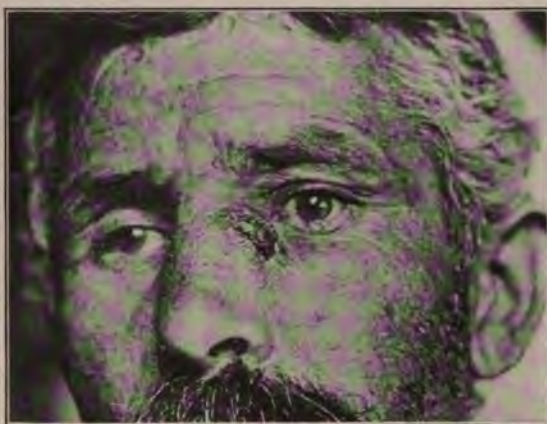


Fig. 126.—Gummatous syphilide of nose that was at first mistaken for carcinoma, until other signs of syphilis were found and the Wassermann proved positive. Disappeared under one injection of neosalvarsan.



Fig. 127.—"Cobblestone tongue" due to gummatous deposits two years after infection.

usual, due to prolongations of the intrapapillary processes. The mass of the papule is composed of a cellular infiltrate which is very dense

around the blood vessels, even deep down in the corium. In addition the vessels show some endothelial proliferation, which may rarely lead to complete occlusion. The perivascular infiltrate consists of small round and plasma cells.



Fig. 128.—A mixed macular, papular and pustular eruption in a child suffering from congenital syphilis.

In the tertiary lesions the changes usually start around a blood vessel, an area of granulomatous change, not altogether unlike a tu-



Fig. 129.—Typical syphilitic facies, with annular, discoid syphilide. (Cope-land's case.)

bercle, first forming, and then necrosis due to central softening often occurring. There are not found so many epithelioid cells as in tubercle, the type being chiefly the small round and plasma cell, with a few

giant cells near the periphery. These granulomatous changes take the path of the least resistance, that is towards the skin.



Fig. 130.—Giant condyloma in a child of two suffering from congenital syphilis.

Diagnosis.—Since the laboratory tests for syphilis have come into common use the diagnosis of this malady has been much simplified,



Fig. 131.—Gummous lesion of nose in a child aged three suffering from congenital syphilis.

but we must not neglect the clinical side, especially as syphilis and other ailments may coexist.

The genital chancre must be differentiated from chancreoid, herpes, scabies, and cancer.

The incubation period of a soft sore is about three days, of a chancre over three weeks; chancreoids are usually soft and are frequently multiple while chancres are indurated and solitary. In syphilis the adjoining glands are hard and shotty, while in chancreoid some are soft and tend to suppurate. However the only sure test is the finding of the spirochete.

Herpes is easy to differentiate. The lesions are multiple vesicles, seated upon an inflamed base and showing a great tendency to recur.

Scabies may give a number of hard papules, but the lesions itch



Fig. 132.—Typical Hutchinson's teeth in a boy aged twenty, who had shown no signs of syphilis until six months before.

intensely, and their presence upon other portions of the body will clear the diagnosis.

Cancer of the penis does not develop in the young; it grows but slowly, and the neighboring glands do not enlarge at an early date. The laboratory tests for syphilis are negative in cancer.

Chancre of the lip must be told from carcinoma. Syphilis usually develops in the young and cancer in the old; cancer is rare in women and also infrequent upon the upper lip; in cancer the neighboring glands develop slowly, in syphilis rapidly. A chancre grows very much more rapidly than does a carcinoma.

Other extragenital chancres must be diagnosed from tuberculosis and infections caused by the vegetable parasites such as blastomycosis, etc. Again the laboratory is of the greatest aid here.

Macular syphilis resembles two conditions, pityriasis rosea and a drug rash. Pityriasis rosea has a much brighter color than has syphilis, the lesions are oval, and the long axis runs parallel with the direction of the ribs. In typical cases the lesions of pityriasis clear in the center, becoming yellowish, while the center is a bright rosy color. Even in the atypical cases the varying sizes of the lesions, their bright color, early scaliness and direction should serve to make the diagnosis clear.

Drug rashes are usually bright in color and itch or burn. These

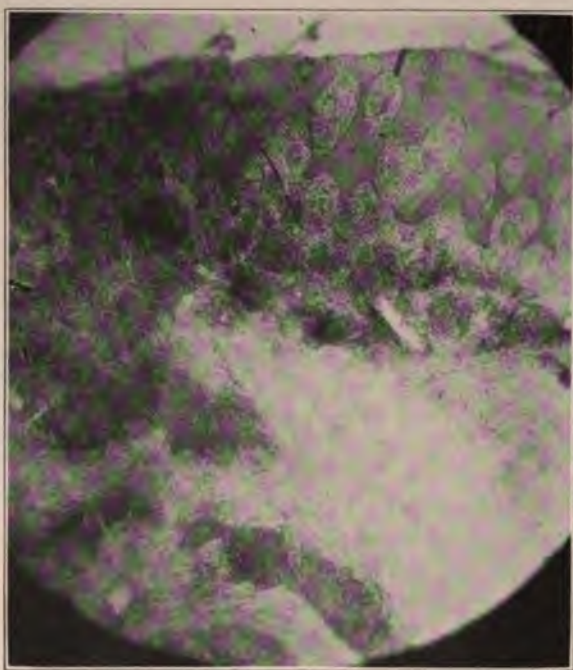


Fig. 133.—Histopathology of a lenticular papule of syphilis.

facts, coupled with the history of drug taking, should make possible a proper diagnosis.

The papular variety is almost characteristic. Occasionally an eczema will confuse, but the itching of the latter, coupled with its more circumscribed distribution, should serve to settle the question. Lichen planus has different lesions; they are angular, umbilicated and arranged in rows, and are often of a purplish color.

The papulosquamous lesions may resemble psoriasis, but in the latter disease the site of predilection is the extensor surfaces of the limbs, and the course is very chronic. Seborrhoeic eczema likewise has

special areas that it prefers to attack—the scalp, midline of the face, axillæ and groins, as well as the midlines of the chest and back. The lesions are dark red and are often covered with greasy scales.

The superficial pustules are to be distinguished from drug rashes, from acne and from smallpox. The drug eruptions are usually not generalized, but chiefly involve the face and body: there is a history of drug taking and other signs of syphilis are wanting. Acne is chronic, its lesions usually having been present for many years: it involves the face and back, and more rarely the chest. The presence of blackheads around which the lesions invariably form should serve to settle the question.

The deeper pustules must be told from ecthyma. All that is necessary is to remove the crust and look at the ulcer beneath: in ecthyma it is superficial and irregular, while in syphilis it is deep and punched out. Ecthymatous lesions are usually confined to the legs, and are common in children, not in adults.

At times it may be rather difficult to distinguish smallpox from pustular syphilis, but as a rule there should be very little trouble. The eruption of smallpox is most profuse upon the face and hands, and the palms are nearly always involved: the pustules are deep-seated, and have a hard, shotty feel. There is usually fever and backache. In syphilis there is an initial lesion, and usually other evidences of syphilis: the palms are usually not involved and while the lesions are moderately infiltrated they are not as hard as in smallpox.

A gumma must be diagnosed from an abscess, from erythema nodosum and occasionally from cancer. An abscess is more acute and more painful, and the resulting ulcer is of irregular shape, not being cleanly punched out as in the ulcer of syphilis. Erythema nodosum is usually symmetrical, occurs chiefly upon the legs, and does not break down. The edge of a gumma is usually soft, while that of a carcinoma is stony hard: a gumma develops more rapidly than a cancer. An injection of salvarsan will clear up a gumma, but will not influence a cancer.

The nodular lesions must be told from tuberculosis and cancer. Lupus begins in early life and spreads very slowly, very much more slowly than does syphilis: it usually attacks the face. Cancer develops after forty, and has a rolled edge of stony hardness: its spread is very slow.

The differential diagnosis between squamous eczema of the palms and squamous syphilis is often extremely difficult. Eczema is usually symmetrical, syphilis may be unilateral; eczema usually itches, especially after washing, while syphilis only rarely itches. Both have

sharply-defined margins, and both look very much alike. It is usually necessary to resort to the laboratory before one can be absolutely certain.

The various *laboratory tests* are now in almost universal use. The first to be considered is the finding of the *treponema pallidum* in the tissues.¹⁹ It can be found only in chancres and in the lesions of secondary syphilis, and after treatment may be in very small numbers. The best way is to squeeze a little clear serum on a slide and examine under the oil immersion lens by aid of the dark-field illuminator. Or the serum may be stained by Wright's blood stain and then examined. Many cases that show the organism in the illuminator will not show it in stained smears. Or tissue may be excised and stained by the Levaditi method, which is not always satisfactory, except in the hands of experts. With a little experience the dark-field illuminator is easy to work and the results are more than satisfactory.

This is hardly the place to discuss the technique of the Wassermann reaction or of Noguchi's modification of it, especially when Noguchi's²⁰ own book is upon the market. However a short account will be given, and in order to do this properly it is first necessary to call attention to the underlying principles of the test. If an animal be subjected to injections of human blood its blood serum will become capable of dissolving human red blood cells, this action being known as hæmolysis. Hæmolysis by serum results from the combined action of two factors, the amboceptor and the complement, the latter of which is constantly present in all fresh serum (especially in that of the guinea-pig); the former is normally absent, but is produced in an animal by injections of red blood cells. Blood cells are not dissolved unless both factors are present in the serum which is used.

An antigen is a substance, either bacterial or protein, that can cause the production of an antibody in the host. In syphilis the presence of the *treponema pallidum* causes the production of antibodies which are present in the serum in greater or less extent. It should be pointed out that these reactions are quantitative as well as qualitative, and that only certain amounts of each substance must be present. The antigen and the antibody can combine only in the presence of complement. If a given amount of complement be added to a given amount of antigen and antibody these two will combine, using up all of the complement. Then if red blood cells and their amboceptor be added no hæmolysis will take place because all of the complement has been used up or "deviated." On this principle rests

¹⁹ Craig and Nichols: *Studies of Syphilis*, War Dept. Bull. No. 3, June, 1913.

²⁰ Noguchi: *Serum Diagnosis of Syphilis*, 3rd Ed.

the serum diagnosis for syphilis, which was first described by Wassermann, Neisser and Bruck in 1906. For antigen these experimenters used the liver of a foetus dead from congenital syphilis, because it was known that the causal organisms were present in very large numbers. Serum of known syphilitics was used as the antibody (in the tests the serum of the suspected individual is employed). To this combination complement, serum from a guinea-pig was added. Then the amboceptor (antisheep serum) and sheep's blood cells were added, and no hæmolysis took place because the complement had been used up in the reaction between the syphilitic serum and the antigen. If on the other hand serum from an individual who did not have syphilis was used, no reaction took place between the antigen and the serum, no complement was used, and the later reaction between the amboceptor and the red blood cells was complete, that is, hæmolysis was produced.

For obvious reasons this reaction was difficult and could only be performed in a very few laboratories. However Noguchi has greatly simplified the technique. For antigen Noguchi uses by preference an extract from a syphilitic liver, although it has also been shown that various other substances will do, for instance, an extract of beef heart, or of other animal organs. Instead of using sheep's blood and an antisheep amboceptor he employed human blood injected into a rabbit, and then obtaining the amboceptor from the rabbit's blood. In addition to this great simplification, he further showed that the amboceptor and the antigen could both be preserved if paper was infiltrated with them. However this is not true of complement, for this should always be obtained fresh. Noguchi has also insisted that all materials used must be carefully standardized.

In obtaining blood for a Wassermann I prefer to draw the blood from a vein in the elbow, using an all-glass syringe, and drawing off about 20 minims. With a little practice this is much easier and less painful than puncturing the arm or finger, and more blood can be obtained, which is essential if the serum is to be inactivated, which procedure is essential if the test cannot be performed within 24 hours.

Under no circumstances should the patient take any alcohol for at least 24 hours preceding the time for taking the blood, as alcohol will frequently cause a positive reaction to become negative.

The reaction is rarely positive until the chancre has been present for ten days, although it may appear as early as the fifth day. By the end of the third week it is usually strongly positive. During the secondary stage the reaction is positive in over 95 per cent of all cases, so is of great value.

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In the patients in whom the secondary manifestations have disappeared and in whom the late lesions have not as yet manifested themselves, the reaction is positive in about 60 per cent of the cases. Those suffering from late lesions show a positive in from 50 to 85 per cent of instances, while in old infections of long standing with no symptoms the reaction is positive in about 50 to 60 per cent. In other words a negative Wassermann may be of very little value, but a positive reaction, if done by a capable man, is invaluable. Not only as a diagnostic aid, but also as an index to treatment is the Wassermann reaction of the utmost importance. Again a negative Wassermann may mean nothing. I have seen an acute flare-up within twenty-four hours of the time that the Wassermann was pronounced negative; but a positive Wassermann is of great value, for it shows that the trouble is still active and that further treatment is imperative.

The value of the provocative Wassermann²¹ is not properly appreciated by the majority of practitioners: in many instances we may test the patient's blood and find it negative, but if we give an intravenous injection of salvarsan and then test it in from twenty-four to forty-eight hours we will find it strongly positive, only to become negative again by the third or fourth day. This test is much more delicate than is the ordinary Wassermann, and is at present our best index as to the cure. If a man has a negative provocative Wassermann two years after his last course of treatment he is probably cured.

The luetin reaction has only recently come into use. Luetin is simply a killed culture of the *treponema pallidum* suspended in salt solution. For making a test 5 to 6 cubic millimeters of luetin are drawn up into a finely graduated syringe and an equal amount of normal salt solution added. Then the mixture is injected into the epidermis, so superficially as to produce a wheal or blister. If the reaction be negative all signs have disappeared in from one to three days, but a positive reaction is evidenced by the formation of a papule, vesicle or pustule in from four to five days after the date of injection. Occasionally a positive reaction will not manifest itself for three or four weeks, so patients must be kept under observation for at least a month. The luetin is most often positive in the cases that have much treatment: it is always negative in the chancres, and usually in the secondaries, but is positive in from 50 to 80 per cent of all late cases, especially those that have much treatment. If a patient gives a positive luetin it is a good sign that he is not cured.

Before a patient is discharged as cured, or if there is any doubt

²¹ Craig and Nichols: Loc. cit.

as to diagnosis the spinal fluid should be examined, a Wassermann being done upon it and also a cell count and an estimation of the globulin. In many instances there may be a lurking infection of the nervous system, although the blood Wassermann is negative.

Prognosis.—At the present time the absolute prognosis of syphilis is in doubt. A few years ago we believed that we could cure any case that would consent to swallow mercury for four years; then with the introduction of the Wassermann reaction we found that most of these cases were not cured but were only latent; then we hoped that by the means of salvarsan we could cure a fair percentage of our cases of primary and early secondary syphilis, if we could give them a large number of injections; but further observation upon these cases has shown that most of them are not cured. However Fournier's²² statistics do show very definitely that the cases which have received much treatment are not so apt to have late lesions, either cutaneous or visceral.

The ultimate fate of many syphilitics is death, and death caused directly by the syphilis. While syphilis in its acute stages rarely kills, yet in the chronic stages it numbers its victims by the tens of thousands. Many of the cases of aortic insufficiency, many of aneurism, some of angina pectoris, and a fair percentage of the arteriosclerotics can trace their chronic malady directly to syphilis. In addition all cases of tabes and paresis and many of the other serious nerve troubles spring from the same cause. Verily the fate of the syphilitic is doubtful.

Treatment.—The first question to be considered here is the all-important question of prophylaxis. There are four possible ways in which the frequency of syphilis might be diminished, first by legislation, second by education, third by personal prophylaxis, and fourth by lessening the contagious period. There can be no doubt but that steps should be taken to reduce the prevalence of syphilis, if for no other reason than because of its economic import. It is safe to say that syphilis causes this country the loss of hundreds of millions of dollars each year.

Legislation will not make a race moral. That has been demonstrated time and again. However legislation can do certain good. Undoubtedly many cases of syphilis are acquired while the individual is under the influence of liquor, hence better control of the sale of liquor would help. In the next place it is questionable if a properly enforced curfew law might not be a great aid; next all cases of syphilis should be reportable to the health authorities, for you cannot con-

²² Fournier: *The Treatment and Prophylaxis of Syphilis*, New York, 1906.

trol a disease upon which you cannot lay your hand; parents who have brought syphilitic children into the world should be compelled to see that they receive proper treatment; and lastly the wilful transmission of syphilis should be made a punishable offense, simply because the presence of such a law upon the statute books might aid the physician, especially in forbidding marriage.

Education of the children is of doubtful value to my mind: I fear that sex hygiene lectures will often simply cause a whetting of the sexual interests. It is certain that fear will not prevent men from running the risks of venereal infection, witness the number of physicians and medical students who run such risks! If any one is to be educated it is the parents.

By personal prophylaxis is meant the taking of precautions to prevent venereal infection, that is, the injection into the urethra of a solution of argyrol, and the anointing of the external parts with a calomel ointment. According to certain of the navy physicians this scheme has worked very well in practice. The objection might be raised to it that it practically condones sexual irregularities. To some extent this is true, but when one considers the number of innocent women and children who are infected each year through no fault of their own, it can readily be seen that the advocates of this scheme should be listened to with respect.

By the use of salvarsan the actively contagious periods of syphilis can be greatly shortened; if salvarsan is not available intramuscular injections of mercury are fairly effective. Undoubtedly the ordinary dispensary treatment of the acute cases of primary and secondary syphilis is very bad: every such patient should receive vigorous treatment at the onset. If we isolate our cases of measles there is no reason why we should not lessen the contagious period of syphilis.

Treatment proper may be considered from three different angles, first the general treatment, second the local treatment of the lesions, and third the specific internal medication.

Under *general treatment* a number of things need to be considered. In the first place the contagious nature of the malady must be explained, and the patient warned against sexual intercourse and also kissing. He should have separate towels and table linen, and should sleep alone. It is usual to advise separate eating dishes.

The teeth should be brushed regularly, and the use of tobacco cut to a minimum, especially if there be any lesions about the mouth. Alcohol should not be taken: it seems to directly negative the action of mercury in many cases. It is often recommended that green vegetables be omitted from the dietary, but I have never done this, and

so far have not regretted it. It seems to me that green vegetables are a very important addition to any diet list, especially in the presence of a chronic infection that tends to impoverish the blood.

The urine should be examined at frequent intervals: either the syphilis or the mercury may cause kidney irritation, a trouble that may be serious if not found in time. Likewise the blood should be watched, and any anæmia corrected by a tonic course of treatment.

The *local treatment* of syphilis is not especially important, but in certain cases is a valuable adjunct to the other efforts. The chancre should be treated by the local application of calomel, either in the form of a powder or of an ointment. Local excision of the chancre does no good in preventing generalized infection, for spirochætes have been found in other organs by the time the chancre first manifested itself. Severe pustular lesions and some of the ulcerating lesions will improve rather more rapidly if kept covered with a mercurial preparation: possibly the most elegant is the oleate of mercury, in about a twenty per cent strength. In certain instances where the lesions are very sluggish much better results can be obtained if the lesions are partly curetted away and mercurials applied locally.

In the *internal treatment* of syphilis three drugs are chiefly used, the iodides, mercury and the newer arsenical preparation, salvarsan and neosalvarsan.

As regards the iodides it has been clearly shown that they have not the slightest effect in killing the organism of syphilis. They do, especially in cases of late syphilis, cause the lesions to disappear even when used alone. Some of our best syphilographers believe that the iodides are still invaluable in treating cases of tertiary and brain syphilis, but I must confess that I have never seen any results produced by the iodides that could not be attained by mercury. I can see no object in mixed treatment, early in the stage of syphilis, and no reason for it in the late stages, unless mercury is badly borne. The potassium iodide is usually given, best in carbonated waters. It is improbable that doses larger than half a dram are of any advantage. Sodium iodide is possibly a bit less irritating than the potassium salt, and if necessary one can resort to the syrup of ferric iodide.

Mercurials may be given by mouth, by inunction, by intramuscular injection and by intravenous injection.

The best thing to recommend the giving of mercury by mouth is its convenience, and this will undoubtedly make it popular for years to come. Also it is very fairly effective, at least in causing lesions to disappear. The objections to it are that it is impossible to estimate how much mercury the patient is really receiving, for he may neglect to take his pills, or they may not be properly absorbed. The most

common form of medication is the use of the protiodide, and after an extended use of most of the preparations I am sure that I have gotten better results from it than from any other. The initial dose for an adult should be one-fourth of a grain three times a day, which should be increased, if tolerated by the kidneys and stomach, to about double that dose. The salicylate of mercury in about the same dosage may also be given in pill form. A very popular prescription is a combination of bichloride of mercury and potassium iodide, about as follows:

R Hydrar. chlor. cor.	gr. iss	.1
Potas. iodidi	3 iv	15.
Aquæ, q.s.	3 iii	90.

Such a mixture I consider bad, because I am sure that the bichloride may be injurious to the kidneys.²³ Calomel, given internally, is not absorbed in sufficient quantity to have any marked action upon syphilitic lesions. Mercury given by mouth may upset the digestion badly, and then must be stopped for a time, or else given in another form. I have seen many cases in which pill swallowing had no appreciable effect, and in which the use of intramuscular injections speedily caused the lesions to melt away.

Inunctions are effective but dirty, and the majority of persons will not take them unless they are confined to a hospital. They simply cannot be taken by one who wishes to keep his ailment a secret. As a general rule the 50 per cent mercurial ointment is used. A piece about the size of the end of one's little finger is taken each night, and thoroughly rubbed into the non-hairy portion of the body; the parts usually selected are the inner surfaces of the thighs and arms, and the sides of the trunk. The rubbing should be given to a different spot each night for six nights, on the seventh there should be a rest, and on the eighth the course should be resumed. In the case of children with hereditary syphilis the time-honored method of treatment has been to put a small bit of this same ointment upon the binder at night. However in hereditary syphilis the oleate of mercury is just as effective and very much cleaner, and it is probable that it could be used just as well in adults.

In giving mercurials by injection we have at our disposal a sure way of controlling the dose, at least as long as the patient continues treatment. The results obtained are quicker and better than by any other method, the technique is simple and there is but little pain. For intramuscular injections there are two classes of salts used, first the soluble preparations, and second the insoluble

²³ Hazen: Virginia Med. Semi-Monthly, 1912, xvii, 8.

The only soluble preparation that has proven useful is the succinimide, which may be given in doses varying from $\frac{1}{5}$ to $\frac{4}{5}$ of a grain every week. It should be given deep into the muscles of the buttock, preferably in the upper and outer quadrant, rather near the center. A glass syringe with a needle over an inch long should be employed. The injection should be made deep into the muscle substance and not into the subcutaneous fat, or an abscess may result, and inflammation is sure to. The succinimide is put up in the form of hypodermic tablets, so is very convenient. The bichloride is still used by some, but is exceedingly irritating, and no more effective than the succinimide: it should never be employed.

A number of the insoluble salts are in general use. Among them are the biniodide, the salicylate, gray oil and calomel. The theory of their use is that after injection they form a deposit in the tissues, and that there is a slow but steady absorption from this deposit. As a rule the insoluble preparations with the exception of the biniodide give a trifle more pain than does the succinimide. In the injection care must be taken not to give the injection into a vein: all that is necessary is to draw back the plunger slightly, if the needle is in a vein blood will flow back into the syringe and then another site should be chosen.

The biniodide is well tolerated by almost everyone. The usual dose is $\frac{1}{6}$ grain, given once or twice a week.

The salicylate may be used in one to two-grain doses, given once or occasionally twice a week. It may simply be suspended in paraffine oil, or better in the following:

R	Hydrar. salicylat.	gr. xlviii	3.2
	Guaiacol	5 ss	2.
	Gum camphor	5 ss	2.
	Olei paraffin, q.s.	3 i	30.

This preparation remains sterile and does not cause much pain. It is usually conceded by continental syphilographers that the salicylate is not as effectual as the gray oil or as calomel, but it is better borne by the patient, calomel being very painful, and gray oil occasionally causing abscesses.

Gray oil, or metallic mercury, is best prepared just as is the salicylate, and is given in the same way. Personally I have had a number of abscesses following its use, and have now practically abandoned it.

Calomel is undoubtedly the most powerful antisiphilitic drug at our disposal, with the exception of salvarsan and neosalvarsan. It is often extremely painful, but if prepared according to the formula given for the salicylate is usually well tolerated. This formula is a

modification of the one proposed by Col. Lambkin²⁴ of the British army. One grain of calomel should be given once or twice a week, until the therapeutic result is obtained, and then a milder preparation should be substituted.

The intravenous injection of mercury has never gained popular favor. Recently, however, Kingsbury and Beehet²⁵ have experimented with it, and have reported good results in certain intractable cases, but they do not recommend it as a routine proceeding. They used either 1/6 to 1/3 grain of the bichloride or about one grain of the benzoate, the latter being dissolved in 12 cc. of normal salt solution and the former in distilled water. Injections were made into the veins of the forearm. They found that the patients occasionally developed phlebitis and periphlebitis if a concentrated solution was employed. They did not report upon urine examinations.

Turning to the arsenical preparations, we find that Fowler's and Donovan's solutions have been employed in the treatment of syphilis for many years. It was often found that when mercury had no further effect a course of arsenic would work wonders. Later atoxyl, arsetacine and various other preparations gained a certain vogue for a time, but since the advent of salvarsan have been practically discarded.

Salvarsan was introduced by Ehrlich a few years ago after a most painstaking research for a substance that would kill the treponema when it came in contact with it. Salvarsan may be given in three ways, first intravenously, secondly intramuscularly in water and thirdly intramuscularly suspended in oil. It is usually conceded that an intramuscular injection is more efficacious than an intravenous one, but in the majority of instances the intramuscular injections are attended with extreme discomfort. The technique for the intramuscular injections is simple. The full dose of salvarsan, 0.6 G., is dissolved in 6 cc. of distilled water, a drop of phenolphthalein is added and then sufficient of a caustic potash solution to neutralize the acidity of the salvarsan. The injection may be made upon one side, or the dose may be divided, an equal amount being given in the muscles of the buttocks. Injections may also be made into the lower lumbar muscles. Sutton still sticks to this method, but the majority of other dermatologists have abandoned it, in spite of the fact that it gives superior results.

Salvarsan may be suspended in oil and injected just as is the watery preparation. I have done considerable experimenting with

²⁴ Lambkin: *System of Syphilis*, Power and Murphy, ii, 225.

²⁵ Kingsbury and Beehet: *Jour. Amer. Med. Assn.*, 1914, lxiii, 563.

it, and have found, while efficacious and not especially painful, it was apt to cause late necrosis, one of my cases developing an abscess just two years after the date of injection. Of late I have done some work with the preparation when dissolved in cocoa butter and so far have attained satisfactory results.

Giving an intravenous injection of salvarsan is also comparatively simple. To begin with I believe that the experienced operator is justified in giving these injections in his office, although some men disagree with me in this. 300 cc. of water should be freshly distilled and twice boiled upon the day of use. The apparatus consists of a retainer that is graduated, a rubber tube and a needle, a piece of glass tubing being just above the needle so that bubbles of air can be watched for. Personally I prefer a double-barreled retainer, one side for water, and the other side for the salvarsan solution: both connect through a two-way stop cock with the needle. The salvarsan is dissolved in about 20 cc. of water, and then drop by drop a 15 per cent solution of sodium hydroxide is added. At first there results considerable cloudiness, and the alkali is added until this entirely disappears, but no further, about 18 drops usually being necessary for a full-sized injection. Then more water is added until 250 cc. of solution is obtained. A prominent vein in the bend of the elbow is selected and carefully painted over with iodine, the excess of which is washed off with alcohol. Then a tourniquet is put on the upper arm and the patient clenches his fist tightly, with the result that the veins stand out prominently. Water is then allowed to flow gently through the needle, and the needle is thrust into the vein with the water flowing, the object being to have no air bubble gain entrance. The tourniquet is at once released and the stop cock turned so that the salvarsan solution may flow. The time of injection should be about ten minutes. After the injection has been completed the puncture may be sealed with collodion.

Following the injection of salvarsan there is often fever and headache, and at times the patient feels quite ill for a day or two. There have been a number of deaths, but very few when one considers the number of injections that have been given without regard to proper technique.

Neosalvarsan is a later preparation than salvarsan and has the advantage of being neutral so that it does not have to be neutralized with an alkali. The majority of syphilographers believe that one injection of salvarsan is worth two of neosalvarsan, but after considerable experience, checked up by the Wassermann, I fail to see the slightest difference. Intramuscular injections of the neosalvarsan may be given just as are the same type injections of the older

preparations, but the new preparation seems to cause the more pain, a surprising fact.

The intravenous injections of neosalvarsan are much easier to give: all that is necessary is a supply of freshly distilled and boiled water and a 20 cc. all-glass syringe. The neosalvarsan is dissolved in 20 cc. of water, drawn up into the syringe, and injected directly into the vein, just as is done with the older drug. The few small bubbles of air that enter the vein do no harm. As a rule, with these concentrated solutions there is comparatively little reaction, only about one patient out of ten suffering any inconvenience. Of course if any of the solution is allowed to leak out into the tissues of the arm considerable inflammation may take place. The dose of neosalvarsan is rather larger than that of salvarsan, being about one-half greater. In children the injection may be made into the jugular vein, or into some of the veins of the scalp.

Having described the various drugs used in the treatment of syphilis it next becomes necessary to outline a course of treatment, and this is often an exceedingly difficult thing to do, as each case must be handled upon its merits. If a case is seen in the chancre stage it is advisable to give from eight to ten injections of salvarsan or neosalvarsan at about weekly intervals. Intramuscular injections of mercury should be given at the same time. Then a course of intramuscular mercury injections should be kept up for about six months. This will give the patient a fighting chance for a permanent cure. Of course the patient should be kept under observation for years, either a Wassermann, or better a provocative Wassermann being done every six months. If this becomes positive, or if any signs of trouble recur, the treatment should again be given energetically.

If a patient comes under observation early in the course of secondaries treatment should be the same as for a chancre, but the chances for a permanent cure are not so good.

If a patient comes under treatment more than five months after the initial lesion it is probably not worth while trying for a radical cure, and the effort should simply be made to cause the disappearance of the lesions and the disappearance of the Wassermann. This may require five or six intravenous injections of salvarsan and a long course of mercurial injections. These should be kept up until the provocative Wassermann is negative. It is worth while to make the luetin negative as well, but this usually requires much treatment.

Cases of malignant syphilis are probably best treated by rather smaller doses of salvarsan given close together.

In dispensary patients, or in those who cannot afford many intra-

venous injections, it is well to start in with an intravenous injection of salvarsan and to follow this with injections of insoluble mercurials, and then repeat the salvarsan. This will usually cause the Wassermann to remain negative for some time.

To summarize: in the early stages try for a radical cure by means of repeated injections of salvarsan and of mercury. In late case cure the lesions and produce a negative Wassermann, and if possible a negative luetin as well.

For the treatment of syphilis of the nervous system the reader is referred to a recent article by Fordyce.²⁶

Syphilis in the Negro.²⁷—After a careful study of available statistics, in addition to our own experience, both Fox and I have decided that syphilis is about one and one-half times as common in the hospital type of negro as in the same class of whites. The Wassermann reactions in the hospitals show that about 50 per cent of all negro entries give a positive response, while about 33 1/3 per cent of the whites give a positive. One surprising fact is that the disease is just as prevalent among negro women as men, a fact not true of most other races. Acquired syphilis is not especially uncommon among negro children. The cutaneous manifestations of syphilis in the two races vary considerably as the following statistics gathered from a study of 2,000 cases of skin disease in each race will show:

	Whites	Blacks
Chancre	2	12
Extragenital chancre	12	1
Macular	18	10
Maculopapular	8	4
Annular	43
Papular	10	97
Pustular	4	12
Secondary	22	68
Gumma	14	80
Nodular	20	19
Palmar	12	3
Tertiary	12	39
Congenital	10	42

Several facts are striking. In the first place extragenital chancres are rare, so are macular lesions. On the other hand papular and annular lesions are very common; the annular lesions of syphilis really form one of the characteristic dermatological peculiarities of the negro. The follicular lesions are much commoner than in whites, frambesiform lesions and early squamous lesions are also relatively

²⁶ Fordyce: Jour. Amer. Med. Assn., 1914, lxiii, 552.

²⁷ Hazen: Jour. Amer. Med. Assn., 1914, lxiii, 463.

frequent. Superficial pustular lesions are also very common, even in the very early stages. On the other hand late squamous lesions of the palms and soles are rare.

Syphilis is not less severe in the negroes. I have seen many very intractable cases, even among those who took steady treatment.

GANGOSA.

Synonym.—Rhinopharyngitis mutilans.

Definition.—Gangosa is a disease of uncertain etiology, characterized by destructive ulceration in the mouth and nose, and the neighboring skin.



Fig. 134.—Gangosa. (Collection of Capt. Reasoner.)

Occurrence.—The disease is most common upon the island of Guam, where nearly two per cent of the population is affected, but is also found in the Philippines, and various of the East and West India islands.

Etiology.—There has been considerable discussion as to the etiology, most observers claiming that it was not syphilitic, but recently Dr. Stitt of the U. S. Navy has told me that the disease is undoubtedly a manifestation of syphilis, and that most of the cases in Guam have been cured by salvarsan.

Symptomatology.—The disease usually begins with an ulcer in the pharynx or about the roof of the mouth, and ulceration slowly progresses until in a couple of years the hard and soft palate, the nasal cavity and the contiguous cutaneous coverings are destroyed. The clinical picture is certainly suggestive of a very severe case of congenital syphilis.

Pathology.—Fordyce's²⁸ investigations show that the disease is a chronic granuloma.

Treatment.—In view of Stitt's findings salvarsan should be given a thorough trial.



Fig. 135.—Secondary yaws. (Collection of Capt. H. J. Nichols.)

FRAMBESIA.

Synonyms.—Yaws; Pian; Bouba; Tonga.

Definition.—An endemic, contagious disease caused by a spirochæte, and characterized by both early and late symptoms somewhat suggestive of syphilis.

²⁸ Fordyce and Arnold: Jour. Cutan. Dis., 1906, xxiv, 1.

Occurrence.—The disease is limited to tropical countries; it is found in the Philippines and in many of the West India Islands, as well as in the East Indies. In some sections it has been almost wiped out by the use of salvarsan.

Etiology.—The disease is caused by the *Spirochaete pertenuis*, discovered by Castellani.²⁹ The disease is both infectious and contagious: a break in the skin seems necessary for infection to take place, and actual infection may occur from contact or through an intermediate carrier as a fly.

Symptomatology.—There is a primary lesion or "mother yaw" that is usually extragenital, most frequently being situated upon the face or hands. It is usually papillomatous, and is often about an



Fig. 136.—Tertiary yaws. Periostitis of tibia.

inch in diameter. At a slightly later period there develops a generalized cutaneous eruption, the so-called secondary stage. At first the lesions are papules, but soon become distinctly papillomatous. They may break down and form ulcers, or they may heal spontaneously in the course of several months. The mucous membranes are usually not invaded, and glandular enlargement is not constant. There is a late stage that is not well known, where extensive ulcerations, comparable to those of syphilis may occur. Yaws may likewise affect the viscera.

²⁹ Castellani: Jour. Cutan Dis., 1908, xxvi, 151, 211.

Pathology.—Yaws is one of the infectious granulomata, and the lesions resemble those of the rest of this group—tuberculosis, syphilis, etc.

Diagnosis.—The disease is not syphilis, for an attack of yaws does not prevent an attack of syphilis. In the tertiary stage the differential diagnosis may be very difficult, for yaws gives a positive Wassermann. In the secondary stage the lesions are characteristic.

Prognosis.—The prognosis is now good.

Treatment.—Intravenous injections of salvarsan will absolutely cure the malady.

CHAPTER XV.

DISEASES DUE TO SYSTEMIC INFECTIONS WITH UNKNOWN ORGANISMS.

A number of diseases are undoubtedly due to various systemic infections of undetermined cause. In addition to those recorded below there are certain other types, for instance, Corlett¹ has reported a typical case of erythema multiforme associated with a *Streptococcus septicæmia*, and the same variety of infection will at times give a universal rash closely resembling scarlet fever.

ACUTE SEPTIC PEMPHIGUS.

Synonyms.—*Pemphigus acutus*; *Febris bullosa*.

Definition.—Acute septic pemphigus is an acute septic condition, associated with the formation of bullæ.

Occurrence.—This disease is very rare.

Etiology.—The disease has occurred chiefly in butchers. There is the history of a wound, followed by an acute febrile condition. A diplococcus has been found by a number of observers, notably Pernet and Bulloch.²

Symptomatology.—The disease runs a rapidly fatal course in the majority of instances. It is characterized by the presence of bullæ of varying sizes over the entire cutaneous surface.

Treatment.—The treatment is that of the general condition: it might be well to make an autogenous bacterin from organisms found in the bullæ, or better in the blood.

FOOT AND MOUTH DISEASE.

Foot and mouth disease is primarily a disease of cattle. However it is occasionally transferred to humans, chiefly children, through either direct contact or through the milk. In man the symptoms are fever, digestive disturbances and vesicles upon the mucous membranes of the lips and mouth, and occasionally upon the skin. The mortality is under 5 per cent. In man the disease may be prevented

¹ Corlett: *Jour. Cutan. Dis.*, 1908, xxvi, 7.

² Pernet and Bulloch: *Brit. Jour. Dermat.*, May, 1896.

by boiling the milk. Bowen³ thinks that this disease may be related to acute septic pemphigus.

IMPETIGO HERPETIFORMIS.

Impetigo herpetiformis is an extremely rare disease, nearly always occurring in pregnant women, characterized by grouped vesicles upon the genitocrural region, inner aspects of the thighs, the anterior part of the trunk, and occasionally upon other parts of the body. The lesions speedily become pustular, appear in crops and are accompanied by a high fever. The malady nearly always ends fatally. The cause is still unknown, but is usually conceded to be a septic infection. Patients should be kept in a continuous bath.

MEASLES.

Synonyms.—Rubeola; Morbilli.

Definition.—Measles is an acute, contagious disease, characterized by fever, inflammation of the upper respiratory passages, and a blotchy, macular eruption.

Occurrence.—Measles is a very common disease, although not frequently seen by dermatologists.

Etiology.—The disease is undoubtedly due to an organism of some kind, although it is still unknown. It is extremely contagious, attacking both children and adults, usually children inasmuch as it is generally caught at the first exposure. The contagious elements come from the mucous of the mouth and nose and not from the scales.

Symptomatology.—The period of incubation is about ten days.

The prodromal period is heralded in by catarrhal symptoms: the eyes are red and sensitive to light, and there is a typical coryza. There may be headache and lassitude and usually some fever. This period lasts about four days. Koplik's spots usually appear about the second day. Koplik's spots consist of small reddish areas upon the buccal mucous membrane, each spot having a bluish center. There may occasionally be a prodromal rash, of either an erythematous or urticarial character and lasting but a day.

The eruption appears about the fourth day after the onset of the catarrhal symptoms, the face and neck being first affected, but the eruption spreads rapidly over the remainder of the body, the legs being the last parts attacked. The primary lesion is a macule, exceptionally slightly elevated. In the negro, however, it may be either maculopapular or frankly papular. The macules vary in size

³ Bowen: Jour. Cutan. Dis., 1904, xii, 253.

from 4 mm. to 2 or 3 cm., are roughly oval in outline and are not clearly defined. The lesions are of a dull red color, although they vary considerably in tint. The eruption may become confluent, especially upon the face. Desquamation begins as the rash fades, this occurring by the end of a week.

Special Varieties.—Papular measles are rather uncommon, but do at times occur in the white race, and are fairly frequent in the colored. Small vesicles occasionally surmount the macules. Hæmorrhagic measles, where there is actual hæmorrhage into the lesions so that the color will not disappear upon pressure, are generally found in the malignant cases. However, even mild cases will occasionally show this phenomenon.

Complications.—The cutaneous complications are urticaria, a bul-
lous eruption simulating pemphigus, boils, abscesses and gangrene, especially cancrum oris or noma, where there is necrosis of the cheek.



Fig. 137.—Measles. (Collection of Dr. Howard Fox.)

Visceral complications are bronchitis and broncho-pneumonia, lobar pneumonia, nephritis, arthritis, otitis media, and rarely parotitis, endocarditis, keratitis, hemiplegia, polyneuritis, meningitis and brain abscess. It is not uncommon for tuberculosis to arise shortly after the measles has subsided.

Pathology.—There is, in the macules, a perivascular, periglandular and perifollicular infiltration with small round cells and a few leucocytes. The blood and lymph vessels and the lymph spaces are dilated.

Diagnosis.—The prodromal stage is the actively contagious one, hence if possible the diagnosis should be made before the eruption appears, and this can usually be done by finding the Koplik's spots. After the rash has fully developed the diagnosis is usually clear, but smallpox, scarlet fever, drug rashes, typhus fever and syphilis must

always be differentiated. German measles is especially difficult to distinguish.

Smallpox should only be confused at the early period, while the lesions are still papular and chiefly upon the face. However the catarrhal symptoms are absent in smallpox and there are no Koplik's spots: the lesions in variola are much more deeply seated.

Scarlet fever has a more stormy onset, usually with high fever and some vomiting: coryza and photophobia are absent, there are no Koplik's spots, but instead we find sore throat and a characteristic tongue. The body rash is punctiform, not blotchy.

German measles are very apt to be mistaken for measles, but there are a number of differences: catarrhal symptoms are much less, there are no Koplik's spots but there is usually a marked enlargement of the cervical lymphatic glands. The eruption is much paler in color, the individual lesions are smaller in size and fade more rapidly.

Typhus fever is probably not so rare as has been believed; recently a number of small epidemics have been recognized in several of our Eastern cities, and it is certain that many cases must have been overlooked. In typhus there are usually no symptoms of catarrh, and practically no eruption upon the face. The spleen is enlarged and the patient is much sicker than in measles. The general type of eruption upon the body is similar.

Syphilis should not be confused, although the eruption upon the body may resemble that of measles. In syphilis there is usually a primary lesion, glandular enlargement and usually some other signs of the infection. Fever is commonly lacking and there is no coryza. The face is usually spared in macular syphilides.

Drug rashes may resemble measles, but the face is usually exempt, there is no coryza, and usually a good deal of itching. Fever may be lacking and Koplik's spots always are. In reality the only difficulty arises when a drug has been taken for a condition that is accompanied by coryza.

Prognosis.—According to Osler: "the mortality from the disease itself is not high, but the pulmonary complications render it one of the most serious of the diseases of children. . . . In private practice the mortality is from 2 to 3 per cent; in hospitals from 6 to 10 per cent."

Treatment.—The patient should be kept in bed in a well ventilated room, should be kept upon a light diet, and should drink plenty of water. During the period of desquamation the skin should be frequently oiled. Unless the photophobia is extreme a light room is much better than a darkened one: darkness is never good for a sick patient.

GERMAN MEASLES.

Synonyms.—Rubella; Rötheln.

Definition.—German measles is an acute, contagious disease, characterized by a faint macular eruption, glandular enlargement and a mild fever.

Occurrence.—Epidemics of the disease are fairly common; sporadic cases are not often seen.

Etiology.—The causal organism is unknown. The disease is very contagious.

Symptomatology.—The disease is much milder than measles, and is of shorter duration, lasting only four to five days in the majority of instances. There are slight catarrhal symptoms in some cases: in others they lack entirely. Koplik's spots are not present. The primary lesion is a macule, or more rarely a maculopapule, rarely over one centimeter in diameter, irregularly round, ill-defined and of a faint pink color. The cervical glands are usually enlarged. Fever rarely exceeds 101° F.

Diagnosis.—The disease most often confused is measles, and the differential diagnosis has already been considered under the head of measles. At times the eruption of German measles may closely resemble that of scarlet fever, however the general symptoms are much more pronounced in the latter malady.

Prognosis.—The prognosis is almost invariably favorable.

Treatment.—The treatment is similar to that of measles.

SCARLET FEVER.

Synonym.—Scarlatina.

Definition.—Scarlet fever is an acute, infectious and contagious disease, characterized by a marked febrile disturbance and by a general eruption.

Occurrence.—Scarlet fever is a common disease, but one not often seen by dermatologists.

Etiology.—The causal organism has not as yet been determined. The disease is usually contracted directly from a patient already suffering with the malady, but may be conveyed by a third person or by infected articles. There seems good evidence that the infection can be conveyed by milk. There are usually found streptococci in the infected persons, and some have believed that scarlet fever is a special form of streptococcus infection, just as is erysipelas. This has not as yet been satisfactorily disproven, although the majority of clinicians do not concede it. It is certain that a streptococcus infection can give symptoms very similar to scarlet fever.

Symptomatology.—The incubation period is usually from two to four days. The onset is usually sudden: vomiting is common, so are convulsions. On the first day the fever may rise to 104° F.



Fig. 138.—Scarlet fever, stage of desquamation. (Collection of Dr. Howard Fox.)

The eruption usually appears in about twenty-four hours, first arising on the chest and neck, and rapidly spreading over the whole

skin. After the third day it begins to fade. At first the eruption is distinctly punctate, but soon becomes confluent, with brighter red spots showing through. The color is a vivid red. A few moderate-sized vesicles may develop, especially upon the mons veneris. Miliary vesicles usually occur upon some part of the body, especially in severe cases. Desquamation follows as the eruption fades. The last signs of peeling are upon the palms and soles.

The throat is usually sore: the tonsils are enlarged and reddened, as are the fauces and in fact the whole throat. At first the tongue is heavily coated, but it soon becomes very red and the fungiform papillæ are very prominent. Milk white patches can often be seen upon the gums after the fourth day.

Special Forms of Eruption.—Malignant scarlet fever is fortunately rare; the patient usually dies promptly, having been overwhelmed from the start. There are often petechiæ present upon the skin. In other instances the eruption may be slight and limited to comparatively small areas of the body—a scanty eruption does not necessarily mean a mild attack.

Complications.—The cutaneous complications are herpes, urticaria, vesicles, eczema and abscesses.

The visceral complications are nephritis, which is common, arthritis, otitis media, bronchitis and broncho-pneumonia, endocarditis and pericarditis, adenitis and various nervous lesions.

Diagnosis.—Scarlet fever is most apt to be confused with erythema scarlatinoides: however this disease usually is much less severe than scarlet fever, and the throat symptoms are lacking. Various drugs and antitoxins may produce a rash that is similar to scarlatina, but the history and the lack of characteristic throat symptoms should serve to give a correct diagnosis.

Prognosis.—Epidemics vary greatly in severity, and seem to be becoming milder. The average death rate in hospitals approximates 10 per cent: in private practice it is much lower. In infants under one year the mortality is very high.

Treatment.—Cases must be isolated, which is difficult at home. A liquid diet and plenty of water should be given and the bowels kept open. Cold sponges should be given while the fever is high. The heart and kidneys must be carefully watched. During the period of desquamation the body should be rubbed with oil.

CHICKEN-POX.

Synonym.—Varicella.

Definition.—Chicken-pox is an acute contagious disease, of unknown etiology, characterized by fever and a vesicular eruption.

Occurrence.—Chicken-pox is an extremely common disease. It usually occurs in children, but is by no means rare in adults: I have seen many cases in adult negroes.

Etiology.—The causal organism is unknown. The disease occurs both in epidemics and sporadically. The disease is markedly contagious.

Symptomatology.—The incubation period is from ten to fifteen days. The person then becomes feverish and the rash appears within twenty-four hours. The body is chiefly attacked. The primary lesion is a papule which very soon becomes vesicular. These vesicles appear in crops, so that in a case of several days' standing various types of lesions are encountered. The vesicles vary in size from 2 to 6 millimeters, are usually rather superficial and are filled with a clear serum, which may become slightly purulent. They are usually not umbilicated. They rupture early, a crust then forming. At the onset the vesicles may be surrounded by a wide inflammatory areola. While lesions may first appear upon the face, still in the majority of instances the eruption is much more profuse upon the trunk than elsewhere. Not infrequently vesicles form upon both the upper and lower surfaces of the tongue. There may or may not be one or two lesions upon the palms or soles. It is not uncommon for some of the vesicles to be followed by slight scars, which are often the result of secondary infection rather than of the varicella itself.

The constitutional symptoms in chicken-pox are usually slight: there is some malaise and fever ranging between 99° F. and 101° F. Vomiting and backache are usually absent.

Complications.—Upon the skin there may develop pustules, bullae, boils and abscesses. Disseminated gangrene rarely develops. Nephritis exceptionally accompanies chicken-pox.

Pathology.—The vesicle forms in the upper portion of the prickle layer. Cellular partitions run from the roof to the base. There are marked colliquative changes in the epithelium. The nucleus may persist in the cavity that results from the degeneration or it may be missing. The cells are swollen and rounded, and lose their prickles, and resemble those found in zoster. Balloon degenerations are often seen.

Diagnosis.—The diagnosis from small-pox is usually not difficult if certain characteristics are borne in mind. Chicken-pox is more apt to occur in children and small-pox in adults. The distribution is most important, the lesions of small-pox predominating upon the exposed surfaces, those of chicken-pox upon the covered portions of the skin. Lesions of small-pox are nearly always found upon the palms

and soles, while in varicella there are but a few here. The primary lesions of chicken-pox are papules that very speedily become vesicles, and that appear in crops, while in small-pox the primary lesions are



Fig. 139.—Chicken-pox. (Collection of Dr. Howard Fox.)

papules that soon become vesicular, then pustular. The lesions of small-pox are much more indurated than are those of varicella, likewise

they are often umbilicated in the former malady. In well-developed cases the constitutional symptoms of small-pox are much more severe than those of varicella, there is more fever, and nearly always backache, and often vomiting.

It is possible to confuse chicken-pox with impetigo contagiosa, but as a rule there are not nearly so many lesions in the latter, and they usually predominate upon the face. Fever is lacking in impetigo.

Prognosis.—The prognosis is very good.

Treatment.—No special treatment is required; the patient should be kept quiet, given a light diet and plenty of water, and the bowels opened. If there is much itching calamine lotion should be used.

Chicken-Pox in the Negro.—Chicken-pox is common in the adult negro. Nearly 20 per cent of my cases occurred in those past eighteen. In the colored the vesicles are often very small, sometimes only a millimeter or two in diameter. Lesions in the scalp and mouth seem especially abundant.

SMALL-POX.

Synonym.—Variola.

Definition.—Small-pox is an acute contagious disease, characterized by general symptoms and by an eruption which passes through the stages of papule, vesicle, pustule and crust.

Occurrence.—In most parts of the country small-pox is now rather uncommon, but in certain rural districts it is constantly endemic.

Etiology.—Small-pox is very contagious, and exposed persons, if unvaccinated, are usually attacked. The disease is usually caught from direct contact, but may be carried by intermediate objects. The nature of the organism causing the disease is as yet unknown, although protozoon-like bodies have been described by various pathologists. It must never be forgotten that a person may contract a very severe form of the disease from contact with a slight case. Usually, however, epidemics are either mild or severe.

Symptomatology.—The incubation period is from nine to fifteen days, most often about twelve. During the period of invasion the adult may have a chill, or at least have chilly sensations. In children convulsions are not uncommon. Usually there is headache, backache and often vomiting. Initial rashes during the prodromal period are not infrequent. Two forms can be distinguished, the diffuse type and the measly type, both usually being limited to the lower abdomen and the inner aspects of the thighs, but they may also occur upon any portion of the body. During this period there is generally considerable fever.

Three forms of the eruption proper are described by Osler:

Variola vera; (1) Discrete, (2) Confluent.

Variola hæmorrhagica.

Varioloid, small-pox modified by vaccination.

In any of the types the eruption usually appears upon the fourth day as macules upon the forehead, and shortly upon other places, the temperature falling as the rash appears. The lesions at once become papular, and by the sixth day are vesicular. Each is indurated,



Fig. 140.—Small-pox, the lesions beginning to mature.

circular and may present a slight umbilication. They are most prevalent upon the face and hands, but some are found upon all parts of the body. About the eighth day the vesicles change to pustules, the flat top disappearing and the lesions becoming semiglobular in shape. The fever again rises at this time, and there may be considerable œdema of the skin, especially of the face. The pustules soon dry up, and by the tenth day the fever has again fallen. Scarring may or may not follow.

In the confluent form the prodromal symptoms are the same, and it is only at the stage of maturation that the confluence takes place. The constitutional symptoms are usually more severe than in the dis-

crete type. Salivation in adults and diarrhœa in children are very apt to occur. The cervical lymph glands are much swollen.

Hæmorrhagic small-pox occurs in two forms, one the petechial or black small-pox, purpura variolosa, where the hæmorrhages occur early, the other the variola hæmorrhagica pustulosa, where hæmorrhage takes place into the pustules. In the first type the illness is grave from the start, ecchymoses appear upon the skin and mucous surfaces as early as the third day. Death may take place before the papules appear. In the second variety the disease progresses normally until the pustules develop, then they fill with blood: bleeding from the mucous membranes may also occur. The earlier the hæmorrhages develop in the course of the disease the graver the prognosis. Most of the cases die.

Varioloid means a modified form of small-pox, developing in those previously vaccinated. It may start with severity, and the headache and backache may be distressing, but the eruption is mild and there is no secondary fever at the time of maturation. I have also seen a number of cases in unvaccinated persons which ran exactly this course.

Complications.—Laryngitis is fairly common, and may be very serious, broncho-pneumonia is not uncommon, but the lobar variety is rare. Albuminuria is frequent but true nephritis rare. Arthritis may occur, heart complications are unusual, and the digestive tract is seldom affected. True neuritis may supervene. Boils are common.

Pathology.—The histopathology of the pox has been especially studied by Unna, and later by Councilman and his associates. The vesicle forms in the prickly layer, apparently as the direct result of cellular degeneration. Reticulating and ballooning colligation takes place, both being varieties of fibrinoid degeneration. As a result of the former the protoplasm of the cells becomes liquified, and a few trabeculae result, which hold nucleus and cell-mantle together. As a result of the second the whole protoplasm swells up and becomes cloudy. Most of the cells have the form of hollow spheres or balloons: this type attacks chiefly the younger cells, especially the basal ones, while the former variety attacks the older prickly cells. The corium shows marked inflammatory evidences.

Diagnosis.—The differential diagnosis between small-pox and chicken-pox has already been discussed under the heading of chicken-pox. Measles may be confused, both at the time of the prodromal rash, and even at the start of the true eruption. The constitutional symptoms in small-pox are usually much more severe, while the catarrhal symptoms and the Koplik spots are absent. The eruption in small-pox is much deeper-seated and more indurated than in measles.

Probably small-pox is more often confused with pustular syphilis, than with any other disease, especially in the negro. However there are a number of differences that should always guide one correctly. In the first place in cases of syphilis there is usually the history or the remains of a chancre. Secondly the onset is usually different, for syphilis usually develops insidiously and small-pox with chilly sensations, backache and often vomiting, while headache is common to both maladies. Fever is commonly present in small-pox, often of a marked degree, while it is usually absent in syphilis. The localization of the eruption is different, for the lesions of small-pox are most common upon the face and hands, and usually affect the palms and soles, while in syphilis the worst of the eruption is upon the body and thighs, and only exceptionally upon the palms and soles. The lesions in small-pox are more indurated than those of lues. Lastly other signs of syphilis, such as sore throat, alopecia, etc., are commonly wanting in variola, and the Wassermann is negative. Glandular enlargement may occur in both diseases, but is more constant in syphilis.

Acne, especially that due to the iodides, may be mistaken for small-pox, but there are usually no constitutional symptoms in the former, and there is the definite history of drug taking, while the presence of blackheads should serve to clear the diagnosis in the simple acne.

Prognosis.—In unprotected persons severe cases of small-pox are accompanied by a high mortality, while the mild cases usually recover. Those who have been vaccinated nearly always get well.

Prophylaxis.—This is not the place to go into the efficacy of vaccination: suffice it to say that vaccination and revaccination is almost absolutely specific. Revaccination should be tried at least every five years.

Treatment.—Segregation is imperative. There is no specific treatment. The diet should be light, plenty of water should be given and the bowels must be kept open. Sponging should be used for the fever. The local use of antiseptics, including iodine, does not seem to be of value in preventing scar formation.

VACCINIA.

Synonym.—Cow-pox.

Definition.—Cow-pox is an eruptive disease of the cow, which when inoculated into man, produces a local pox with some constitutional disturbances, and which protects against small-pox.

Etiology.—The causative organism is unknown.

Symptomatology.—Schamberg gives the following classification of the skin changes associated with vaccination:

I. Eruptions attributable to the virus pure and simple	Local	<ul style="list-style-type: none"> Normal vaccinia. Erythematous dermatitis (areola).
	Constitutional	<ul style="list-style-type: none"> Generalized vaccinia. Diffuse vaccine erythema. Vaccinal roseola. Vaccinal lichen. Vaccinal miliaria. Purpura. Erythema multiforme. Urticaria.
II. Eruptions attributable to mixed infection at time of vaccination or later.	Local	<ul style="list-style-type: none"> Erysipelas. Impetigo contagiosa. Furunculosis. Vaccinal ulcer. Localized gangrene. Cellulitis.
	Constitutional	<ul style="list-style-type: none"> Disseminated gangrene. Syphilis. Leprosy (?). Tuberculosis (?).



Fig. 141.—Transferred vaccination. (Gilchrist's case.)

In the normal vaccinia a papule usually arises upon the third day: by the fifth or sixth day there is a vesicle, which by the eighth day has reached its maximum size. By the tenth day it has become purulent. At the end of the second week a crust has formed. Constitutional symptoms consist of fever, malaise and the swelling of the neighboring lymph glands.

Of generalized vaccinia there are two main varieties, the spontaneous and that from autoinoculation. The former is rare, the latter common. The generalized form may resemble small-pox, but appears in crops. Roseolar lesions are the commonest of the spontaneous variety. The lesions resulting from autoinoculation closely resemble the parent type.

Treatment.—The treatment is purely symptomatic.

An excellent account of the acute eruptive fevers, together with bibliography, may be obtained in Osler's "Principles and Practice of Medicine," in Schamberg's "Diseases of the Skin and Eruptive Fevers," and in Welch and Schamberg's "Acute Contagious Diseases."

PERUVIAN WARTS.⁴

Synonyms.—Verruga peruana; Carrion's disease.

Peruvian warts were formerly believed to be the same disease as Oroya fever, but this has recently been disproven. Neither does the disease bear any relationship to Uta. Townsend⁵ has shown that it may be transmitted by a biting gnat, the *Phlebotomus verrucarum*. The eruption first appears as macules, usually upon the face or limbs. These form vesicles, and later wart-like elevations appear, which may form superficial ulcers. Excellent illustrations of a case may be found in Stelwagon's book. So far no specific treatment has been described.

⁴ Strong, Tyzzer, Brues, Sellards and Gastiaboru: Jour. Amer. Med. Assn., 1913, lxi, 1713.

⁵ Townsend: Jour. Amer. Med. Assn., 1913, lxi, 1717.

CHAPTER XVI.

DISEASES DUE TO TOXÆMIAS.

There are many diseases due to toxæmias of various kinds. In the majority of instances we know very little as to the nature of the poison causing the cutaneous outbreak. We do know that certain drugs can cause very marked eruptions, and we do know that anaphylaxis can cause other eruptions, but beyond this we are almost completely ignorant. It is fashionable to say that many disorders are due to "autointoxication," but the term is very vague, and in the majority of instances, as Taylor¹ has well pointed out, is simply an excuse for ignorance. In dealing with toxæmias one fact deserves special attention, namely that toxins may be excreted in several ways, first through the kidneys, second through the digestive tract, third through the lungs and lastly through the skin. It is not unusual to find that more than one of these paths is seriously involved in the disease process.

DRUG RASHES.

A very large number of drugs may cause cutaneous outbreaks. Some do it with more or less regularity, and some only do it in exceptional cases: the element of predisposition always plays an important part; but we do not know what constitutes predisposition. Neither do we know the exact mechanism that produces the outbreak. As Stelwagon says, there are three theories: (1) That the drug directly acts as an irritant as it passes through the skin; (2) That there is an increased cutaneous elimination due to defective conditions of the other organs of excretion; (3) That the condition is a neurosis. Needless to say the last view is simply a confession of ignorance.

The outbreak is usually sudden, sometimes after but one dose of a drug, and sometimes after its prolonged administration. As a rule the eruption is rather prominent and is accompanied by marked subjective sensations. The withdrawal of the drug and a few days' observation will usually clear up the diagnosis in a suspected case.

Treatment consists in discontinuing the use of the drug, in hastening the elimination, and in the local use of soothing preparations.

The following drugs need to be briefly considered:

¹ Taylor: Osler's Modern Medicine, Vol. 1.

Aconite exceptionally gives a vesicular eruption.

Acetanilid frequently causes cyanosis of the lips, face and limbs, and occasionally an erythematous rash.

Alcohol may exceptionally cause an erythematous eruption: it is apt to increase an urticaria.

Antimony rarely favors the outbreak of an urticaria.

Antipyrin quite often causes trouble. The eruption is usually measles-like, but may be maculopapular, scarlatiniform or urticarial, and rarely bullous or purpuric. Exceptionally the skin of the penis has become black.



Fig. 142.—Eruption due to potassium bromide.

Antitoxin frequently causes an erythematous or urticarial eruption, together with constitutional symptoms.

Arsenic may cause practically any form of cutaneous eruption, but the commonest is pigmentation. While the ulcerative lesions are the most severe, still the keratotic are the most dangerous, as they frequently degenerate into cancer.

Aspirin may cause a simple erythematous or an urticarial eruption, usually, in either case, associated with intense itching.

Belladonna or *atropin* is apt to cause patchy erythemas, especially in children.

Bromides are frequently the cause of an acne-like breaking out, especially upon the back, shoulders and face. Papillomatous or weeping areas are fairly often met with, and may cause much trouble in diagnosis. Various other varieties of eruption are also observed.

Chloral quite often produces a scarlatiniform eruption, and various other types are also produced by this drug.

Chloroform inhalation may cause an erythematous or even purpuric crop of lesions.

Copaiba often causes a macular eruption that may be mistaken for



Fig. 143.—Eruption due to potassium iodide. (After Ohmann-Dumesnil.)

syphilis and hence is of great importance. Scarlatiniform, urticarial, petechial and various other varieties may also develop.

Digitalis may rarely give rise to varying types of eruption.

Ergot after long administration may cause gangrene. Vesicles and hæmorrhages into the skin may also be caused in exceptional instances.

Hyoscyamus may rarely cause an erythematous or urticarial rash, sometimes various other varieties.

Iodine compounds commonly cause "iodine acne." Bullous, urticarial, nodose and hæmorrhagic lesions are also produced.

Mercury may exceptionally cause a scarlatiniform eruption, usually associated with marked constitutional symptoms. This is most common following the external use of mercury, especially in hairy areas, and is very rarely seen after the internal administration of the drug.

Opium (morphine) fairly often arouses an erythematous eruption of various types, usually associated with intense itching.

Quinine occasionally causes either an erythematous or scarlatini-form eruption, with or without peeling. Various other types may also be produced.

Salicylic acid may cause an erythematous or urticarial eruption, but not commonly.

Silver nitrate after prolonged use may be deposited in the tissues so as to give rise to a slate color, argyria.

Sulphonal occasionally causes varying types of erythematous eruptions.

Turpentine rarely gives rise to erythematous rashes.

Veronal may also cause eruptions of either a macular or urticarial aspect.

The best work upon the subject of the rare actions of drugs is Lewin's "Nebenwirkungen der Arzneimittel," published in 1899. Cushny's book on Pharmacology and Therapeutics also gives many examples.

URTICARIA.

Synonyms.—Hives; nettle rash.

Definition.—Urticaria is an inflammatory affection of the skin, due to the action of toxins upon the blood vessel walls, and characterized by the formation of wheals of varying sizes.

Occurrence.—Urticaria is a very common trouble, nearly every one suffering from it at some time. It forms over three per cent of all dermatoses. It is considerably more frequent in negroes than in whites.

Etiology.—Many different types of toxins are responsible. Various external irritants are often responsible: nearly all insect bites cause the formation of a local wheal at the site of the bite.

Various internal causes are assigned. In the clinic the majority of acute cases of urticaria have followed the eating of pork, cabbage or sea food. Certain other articles cause attacks in predisposed persons; the strawberry rash is a familiar example of this sort. In these cases there is probably a definite anaphylaxis, as the beautiful experiments of Bruck² have shown. Bruck found that if guinea-pigs were sensitized with the serum of a patient suffering from urticaria due to pork they would give all of the characteristics of anaphylaxis when pork was given them, but that normal guinea-pigs were not so affected. In a case of my own,³ in which the eruption was due to oysters, I found

² Bruck: Arch. f. Dermat. u. Syphil., 1909, xcvi, 241.

³ Hazen: Jour. Amer. Med. Assn., 1914, lxii, 695.

that the hypodermic injection of a sterilized emulsion of oyster produced a typical attack. Various drugs and antitoxins and sera also cause urticaria.

It is much harder to determine the etiology of the chronic cases. Milliard, from my clinic, has shown that nearly twenty per cent of the cases in negroes are associated with a strongly positive Wassermann, and that antisyphilitic treatment will promptly cure them. Ravitch⁴ believes that derangements in thyroid secretion are responsible for some cases. Stelwagon believes that pelvic conditions may at times be



Fig. 144.—Factitious urticaria. (Gilchrist's case.)

the cause. It is possible that focal infections may be the underlying cause with some individuals.

Symptomatology.—All ages, sexes and nationalities are equally liable. The first indication is usually more or less violent itching, usually worse upon the scalp and body. Upon examination typical wheals may be found, especially where the skin is irritated. Wheals are slightly elevated, pinkish, circumscribed lesions, usually not over one centimeter in diameter, that last but a short time and then fade

⁴ Ravitch: Jour. Cutan. Dis., 1907, xxv, 512.

away without leaving any trace. Almost invariably they can be elicited by scratching or rubbing. During an attack it is possible to produce linear wheals by drawing a blunt instrument firmly over the surface (*urticaria factitia*).

Urticaria may be of varying degrees of severity; it may last one day or it may persist for a year or even more.

At times there may be more or less severe constitutional symptoms, although these are unusual in typical cases. These symptoms are malaise, intestinal disturbance, sometimes with severe abdominal colic, arthritic pains, fever, sore throat and various others that will be detailed under erythema multiforme.

Special Forms.—It must always be borne in mind that erythema multiforme, purpura and urticaria are closely related disorders, and that lesions of all may coexist.



Fig. 145.—Giant urticaria, due to eating of cabbage.

Giant urticaria is closely allied, and is probably simply a large, circumscribed wheal. It is most common upon the lip, but may occur elsewhere. Certain cases of angioneurotic œdema undoubtedly come under this heading.

Papular urticaria, *lichen urticatus*, occurs chiefly in children. The lesions are most common upon the arms but also occur upon other portions of the body: they are discrete, scattered papules, from which the tops have usually been scratched, and are likely to be confused with eczema or prurigo. The eruption may last for several months, the individual lesions usually persisting for two or three weeks and new ones arising.

Urticaria perstans is closely related to the last type, the typical lesions of urticaria lasting for a number of days. Occasionally these lesions assume gyrate forms.

Urticaria is not necessarily confined to the skin: various of the mucous membranes may suffer, and in urticaria of the larynx the condition may be very alarming. By some it is thought that true bronchial asthma is an urticaria of the bronchioles, an opinion supported by the blood findings in the two diseases.

Pathology.—Gilchrist's⁵ studies upon the histopathology of urticaria are probably the best. The epidermis is unchanged, but the whole corium is the seat of an acute inflammation. There is considerable œdema. The blood vessels are dilated and contain an increased number of polymorphonuclear leucocytes: around the vessels is the same type of cell, many with fragmented nuclei, thus showing the violence of the inflammation. There is an increase in small mononuclear cells and also in mast cells, swelling of the cells in the sweat glands, and fibrin scattered throughout the corium. Welch compares the fragmentation of the nuclei to that produced by diphtheria toxin. Gilchrist concludes: "The only explanation which appears to be possible is that some toxin is circulating in the blood and when a wheal is produced some of the toxin is set free and produces death of cells which is followed by acute inflammatory changes. Therefore a true wheal is an acute inflammatory, œdematous swelling due either to local inoculation of irritating substances, as in insect bites, etc., or to drugs or to some toxin probably originating in the alimentary canal."

Diagnosis.—Urticaria must be diagnosed from the other disease that cause a universal itching, namely scabies, pediculosis corporis and pruritus. Urticaria can almost invariably be correctly diagnosed by producing an artificial wheal, and this is easiest done by drawing a line upon the back with a flat instrument, such as the end of a key. Scabies has a typical distribution, between the fingers, the flexor surfaces of the wrists, the flexors of the arms, the axillæ, lower abdomen, buttocks, inner surfaces of the thighs, submammary folds in women and the genitalia in males. In pediculosis corporis there are linear scratch marks between the shoulder blades and the parasites can usually be found in the seams of the underclothing. The diagnosis of pruritus can be made only by exclusion.

Prognosis.—Acute cases of urticaria almost invariably recover promptly, but the chronic cases are very resistant to treatment. The disease is not serious, except when accompanied by marked visceral manifestations.

Treatment.—In the acute cases a purge should be given at once, also a soothing lotion, such as calamine. At times a saturated solution of menthol in alcohol seems to work very nicely.

⁵Gilchrist: Jour. Cutan. Dis., 1908, xxvi, 121.

The subacute cases should be treated with laxatives, plenty of water internally, and a diet consisting of easily digestible foods, avoiding those that might disagree with the particular patient under treatment.

The chronic cases are very difficult to handle: I would rather treat any skin disease than chronic urticaria. The cases in which there is a history of syphilis or a positive Wassermann usually respond well to mercury or salvarsan. The cases associated with constipation also do well when that condition is corrected. Large doses of hexamethylenamine will cure some individuals. Ergot seems to help some. Gilchrist is fond of combining ergot and tincture of belladonna, and this may work wonders. The use of staphylococcus or of colon bacterins has been very beneficial in some instances. The initial dose of the colon bacterin should be about fifty million. In all cases of chronic urticaria an earnest attempt should be made to find the underlying cause, an attempt often fruitless at the present time. Locally it is often necessary to employ various substances to control the itching, and lotions that quickly evaporate are to be preferred. Menthol in alcohol is one of the best. Occasionally an ointment composed of menthol, zinc oxide and cold cream seems very grateful to the patient. The use of calcium lactate, as advised under erythema multiforme is very valuable in many cases as White has shown. I have had some excellent results with this remedy.

ERYTHEMA MULTIFORME.

Synonym.—Erythema exsudativum multiforme.

Definition.—Erythema multiforme is an acute inflammatory disease, due to a toxin, and characterized by varying types of cutaneous eruption, and at times by more or less severe constitutional disturbances.

Occurrence.—The disease constitutes about three-fifths of one per cent of all cutaneous disorders. It is much commoner in whites than in blacks.

Etiology.—The etiology of erythema multiforme is very similar to that of urticaria. At various times it has been considered as due to an angioneurosis (whatever that may mean), to reflex causes especially of urethral origin, autointoxication, the local effects of bacteria and to systemic infections. Corlett⁶ has published one case due to a streptococcus infection and Parker and myself⁷ one due to typhoid

⁶ Corlett: Jour. Cutan. Dis., 1908, xxvi, 7.

⁷ Parker and Hazen: Bull. Johns Hopkins Hosp., 1911, xxii, 80.

fever. I* have had a case that was definitely due to anaphylaxis, and it is probable that there are others of a similar nature.

The disease is rare in childhood and in old age; the two sexes are about equally affected. The disease shows a marked tendency to recur usually at more or less definite intervals.

Symptomatology.—The lesions of erythema multiforme are of many kinds, but in each individual case they are usually similar: they vary in different cases, but not in the same patient.

In general it may be said that the hands, forearms, the legs and the face are the sites of predilection; however the eruption may occur anywhere upon the body. The eruption usually appears suddenly, and new crops develop from time to time. The lesions are never scaly. They rarely itch but are usually tender, and may burn or pain.



Fig. 147.—Annular form of erythema multiforme. (Gillechrist's case.)

Erythema papulatum, or the *papular variety*, is the commonest manifestation. The lesions are usually confined to the backs of the hands and forearms. They vary in size from one-fourth to three-quarters of an inch, some are usually round while the rest are irregular in shape: they are sharply circumscribed and vary in color from a pale pink to a bright red. The legs and face may also be affected.

Erythema maculatum, or the *erythematous variety*, is distinctly rarer than the papular, but the lesions are otherwise similar. Often this variety forms distinct rings: upon the body there may be rings within rings, the outer being very large. In these cases there may be varying color displays, pink and yellow predominating, so that the

* Hazen: Jour. Amer. Med. Assn., 1914, lxii, 695.



Fig. 146.—Papular erythema multiforme.

name erythema iris is often used to designate these lesions. In some instances serpiginous patches or lines may result as parts of the rings fade away, the erythema gyratum. In rare instances a large part of the body may be covered by one large erythematous lesion.

Erythema vesiculosum or *bullosum* are the terms used to designate the vesicular or bullous varieties, which are probably commoner upon the legs than elsewhere. The large bullous lesions are most frequently seen in the poorer class, who have recently reached America, and are frequently named "Immigrant's dermatitis." At times there are en-



Fig. 148.—Ringed erythema multiforme forming large patches. (Gilchrist's case.)

countered erythematous or papular rings, within which are vesicles, herpes iris.

It should be clearly understood that the cutaneous lesions of erythema multiforme are only a part of a toxæmia that frequently affects the entire body economy. To gain a clear conception of the visceral manifestations the three papers by Osler⁹ should be read. Any of the

⁹ Osler: Amer. Jour. Med. Sc., 1895, cx, 629; *ibid.*, 1904, cxxvii, 1; Brit. Jour. Dermat., 1900, xii, 227.

following complications may occur, sometimes without skin lesions: Acute tonsillitis, otitis media, laryngitis, conjunctivitis, ulceration of lips or tongue, temporary delirium, aphasia, hemiplegia, meningitis, gastro-intestinal crises with colic vomiting and diarrhœa, appendicitis, degeneration of the liver, jaundice, enlargement of the liver or spleen, bronchitis, pneumonia, pleurisy with effusion, endocarditis, pericarditis, anæmia, arthritis, nephritis, ulceration of the cervix, hemorrhages from nose, intestines, stomach, lungs or kidneys, and fever usually irregular and of short duration, but often high. In the cases associated with severe constitutional manifestations the death



Fig. 149.—Vesicular erythema multiforme.

rate is high. Fortunately, however, the vast majority of cases run a comparatively benign course: there may be a little fever, or a few arthritis or abdominal pains but no more.

Pathology.—As in urticaria the lesions are due to the escape of a toxin through the vessel walls: to call the condition an angioneurosis is absolutely meaningless. In studying the histopathology of the condition it is readily seen that the trouble starts in the upper portion of the corium. The blood vessels are distended, and there is a heavy infiltrate of the entire subpapillary portion of the corium with fixed tissue and small round cells: there are no polymorphonuclears and no plasma cells present. The upper portion of the corium is very œde-

matous and the collagen stains poorly: in the papillæ it may be impossible to see it at all. The rete is often slightly thickened: the prickles stain poorly and there is considerable invasion with elongated fixed tissue cells. In the vesicular variety of erythema multiforme the vesicle forms either in the deep layer of the rete, or just beneath the basal layer. The pathological picture is essentially the same as in the other types, but the œdema and cellular infiltration are greater.

Diagnosis.—The diagnosis is usually easy if certain things are borne in mind, namely the tendency for the eruption to primarily affect the backs of the hands and forearms and the face, the fact that both the macules and papules are apt to become annular, the tendency to recurrence, the absence of scales, and the lack of itching.

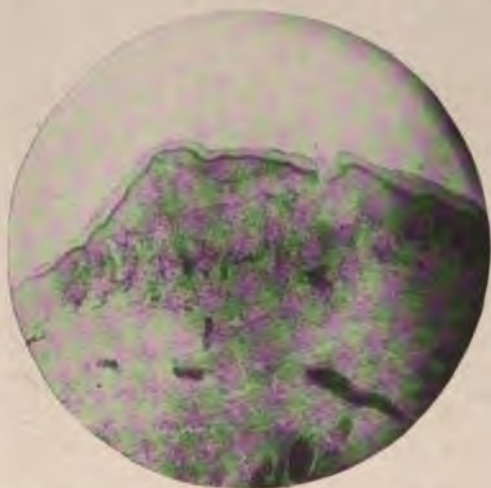


Fig. 150.—Histopathology of herpes iris. The vesicles form just beneath the basal layer of the rete.

In certain instances it may be confused with urticaria, for erythema multiforme is not infrequently accompanied by urticaria, but as a rule the longer duration of the lesions in erythema clinches the diagnosis. The vesicular lesions may be mistaken for chicken-pox, but are usually localized to a small portion of the body which is not the case in varicella. The bullous lesions may be confused with those of pemphigus but again are more localized.

Prognosis.—In the cases where there are serious constitutional symptoms the prognosis is ultimately grave, for many of these cases succumb to a recurrent attack. In the ordinary cases, however, recovery practically always takes place. There is an unfortunate tendency for the disease to recur.

Treatment.—There is no specific treatment. The patient should live a hygienic life and the bowels should be kept open all of the time. Plenty of water should be taken. During an attack there is but little to do, for the disease is distinctly self-limited. Elimination should be insisted upon; the lesions if itchy or painful should be covered with calamine lotion. The larger bullæ should be opened and dressed with boric acid or zinc oxide ointments. Internal antiseptics seem to have no effect. Bacterin treatment with either the albus or the colon preparations is distinctly promising in the chronic cases and is well worth a trial. White¹⁰ recommends the internal use of calcium lactate in the following prescription:

R	Tct. capsici	℥ viii	.5
	Calcium lactat.	gr. cxi	9.333
	Aquæ chlorof.	O i	500.

White further advises that the patient take this over a long period of time, taking the prescription for about a month and then discontinuing for ten day, only to resume it again. In addition he recommends that no acid fruits be eaten and that the patients partake of foods rich in calcium salts such as milk, eggs, spinach, cheese, peas, beans, spinach, etc. White is really enthusiastic over this treatment and judging from his results it is well worth a trial.

PURPURA.

Synonym.—Hæmorrhœa petechialis.

Definition.—A disease due to the action of toxins upon the blood vessels, characterized by various constitutional disturbances and by the presence of small or large hæmorrhages beneath the skin.

Occurrence.—Purpuric conditions constitute about three-tenths of one per cent of all dermatoses.

Etiology.—The cause of purpura is essentially the same as that of urticaria and of erythema multiforme. As Osler has well pointed out the three conditions may occur in the same individual, either at the same time, or separately. It may occur in the healthy, in the cachectic, or as an accompaniment of some grave constitutional affection or infection. It may occur at any age and in any sex. Some cases are due to drug ingestion. In fact there is no one cause for purpura, the severe action of the poison may at times produce it. Strictly speaking there is no doubt but that Osler is correct when he says: "Purpura is a symptom, not a disease."

¹⁰ White: Jour. Cutan. Dis., 1914, xxxii, 691

Symptomatology.—The following account is taken from Osler's "Practice of Medicine."

I. SYMPTOMATIC PURPURA.—(a) *Infectious*.—Purpura occurs in various septic conditions, such as septicæmia, malignant endocarditis, typhus fever, and occasionally in the acute exanthemata and epidemic meningitis.

(b) *Toxic*.—Purpura may be produced by the following poisons, as well as by many more: snake virus, copaiba, quinine, belladonna, mercury, ergot, iodides and benzol, and may be associated with jaundice.



Fig. 151.—Purpura simplex.

(c) *Cachectic*.—Purpura may be associated with cancer, tuberculosis, Hodgkin's disease, Bright's disease, scurvy, and extreme old age.

(d) *Neurotic*.—The so-called myelopathic purpura is occasionally seen in tabes, in acute myelitis, transverse myelitis, severe neuralgia and hysteria. It might be suggested that in certain cases the nervous symptoms are due to the same toxin that causes the purpura.

(e) *Mechanical*.—Venous stasis, as in whooping cough, or a hard blow may cause purpura.

II. **ARTHRITIC PURPURA.**—This form is associated with arthritic pain, and is therefore called rheumatic, although it is much more probable that both the joint symptoms and the purpura are due to the action of a toxin. Three varieties are usually recognized.

(a) *Purpura Simplex.*—This type is usually seen in children or in comparatively young people. Without warning a crop of purpuric spots appear, usually upon the legs, less commonly upon the trunk. There is usually some slight gastric disturbance and some headache or malaise. There may be slight arthritic pain. The patient usually recovers in two or three weeks.

(b) *Purpura (Peliosis) Rheumatica (Schönlein's Disease).*—In this condition there is a multiple arthritis and a cutaneous eruption which may be either a clinical urticaria, erythema multiforme or a purpura. It is most common in men during the third decade of life. Osler notes that it often begins with a sore throat, high temperature and joint pains. The purpura may appear upon the legs or about the affected joints. There is usually but slight joint involvement although the pain may be excessive. I am inclined to believe that a toxin may be excreted into a joint and thus cause the great pain as well as the neighboring skin lesions.

In any form of purpura there may be the systemic lesions and symptoms mentioned under erythema multiforme. When there are gastrointestinal crises the condition is often called Henoch's purpura.

III. **PURPURA HEMORRHAGICA (WERLHOF'S DISEASE).**—In this type of cases there are severe hæmorrhages, not only into the skin, but into the mucous membranes as well. It is usually met with in young and delicate persons, but may attack any one. After a few days of depression hæmorrhages into the skin occur; then there is bleeding from various of the mucous membranes, especially the kidneys, bowels and lungs, and death usually ensues. There is usually slight fever. Anæmia is always rapidly produced.

Pathology.—The rete is normal. The blood vessels are usually distended, and there is some perivascular infiltration, usually with fixed tissue and small round cells. Either complete red blood cells, or their shadows can be seen in the corium, usually in the central part, and not to any marked extent in the subpapillary portion.

Diagnosis.—The diagnosis of purpura is easy: the lesions are of a purplish color and do not fade away under pressure as in the case of inflammations. Purpura or erythema multiforme with visceral crises must be diagnosed from acute abdominal conditions that require surgical intervention, such as appendicitis. One should always decide whether the condition is a purpura pure and simple, or simply

the hæmorrhagic accompaniment of an acute infectious disease such as cerebrospinal fever or one of the acute exanthemata. Purpura hæmorrhagica must be differentiated from scurvy: in the latter there is involvement of the gums.

Prognosis.—In the majority of the purpuric conditions the ultimate outlook is good, but in purpura hæmorrhagica and the purpuras in which there is an associated nephritis the outlook is gloomy.

Treatment.—There is no specific treatment. Hygiene must be excellent, diet light and the bowels opened and plenty of water given. It is usual to give the salicylates, but they are of doubtful value. Wright has recommended the calcium salts, and many English dermatologists speak well of them, but in the cases in which I have seen them used there was no result. Horse serum should be useful in the

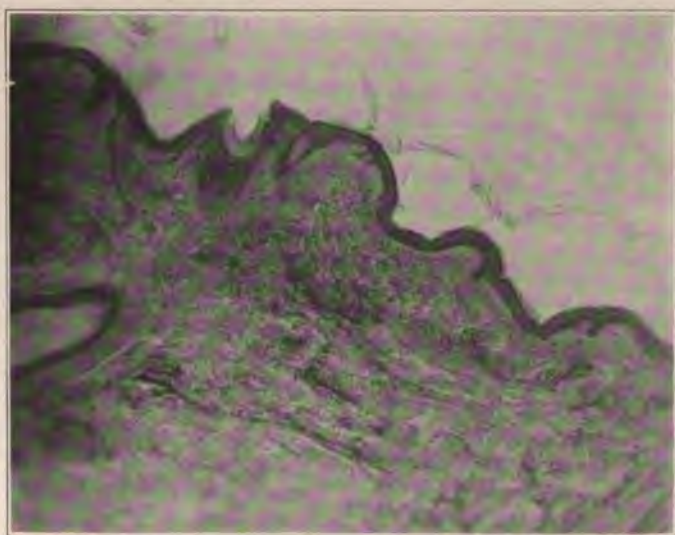


Fig. 152.—Histopathology of purpura simplex. The shadows of many red blood cells can be seen in the whole upper portion of the corium.

severe cases. MacGowan¹¹ strongly recommends the intravenous injections of adrenalin chloride, but in view of the very transient effects it seems probable that either the dried glands should be given internally, or very small doses injected frequently beneath the skin. It is possible that autoserum therapy as practiced by Gottheil and described in the chapter on treatment earlier in this book might be of value in the severe cases.

¹¹ MacGowan: Jour. Cutan. Dis., 1905, xxiii, 72.

ERYTHEMA SCARLATINOIDES.

Synonym.—Erythema scarlatiniforme.

Definition.—Erythema scarlatinoides is a disease of toxic origin, characterized by redness and later by peeling of the skin, and by varying degrees of constitutional involvement.

Occurrence.—The disease is rare, constituting only three-hundredths of one per cent of all skin diseases.

Etiology.—The disease is undoubtedly akin to urticaria and purpura. It tends to recur at more or less regular intervals in the same way that erythema multiforme does. In some cases we can assign a definite cause, as in the cases due to external use of mercurial ointment. In still other instances some drug is clearly responsible, and the list of medicants that may produce such an eruption is long indeed. However in the most interesting group of cases there is an attack at more or less regular intervals.

Symptomatology.—The disease usually starts in abruptly with a diffuse erythematous eruption that shortly covers almost the entire cutaneous surface, and which may involve the mucous membranes of the mouth, eye, vagina, and possibly the rectum. In view of the gastro-intestinal irritation in some of the cases it is more than possible that there is an inflammation of the mucous membrane of the intestinal track. At times there may be either bronchitis or nephritis, but in the vast majority of cases there is only some headache, malaise and depression, with a slight amount of fever. However the constitutional symptoms may be very severe.

The rash may be measles or scarlatiniform or it may resemble erythema multiforme. There is, however, a slight amount of furfuraceous scaling almost from the onset, so that a diagnosis of erythematous eczema is often made. At the end of three or four days there is more scaling, and by the end of a week or ten days there is more or less profuse peeling. In extreme cases both the hair and nails may be lost.

Stelwagon believes that the various cases of *shedding of the skin* should be included under this heading. In these cases there is usually very little constitutional disturbance and almost no preceding erythema. The entire skin may be lost or only a small part of it. This usually happens at rather regular intervals. It suggests the molting observed in some animals, and may not be due to a toxic cause, but to a peculiar reversion to type in the biological sense.

Pathology.—The condition is essentially an acute inflammation. According to Unna the blood vessels are dilated and there is invasion

of the papillæ with "embryonic cells," probably small mononuclears and fixed tissue cells, the interpapillary processes are elongated, the granular layer absent and the horny layer nucleated.

Diagnosis.—The disease must be diagnosed from scarlet fever, measles, drug eruptions, erythema multiforme and acute erythematous eezema. From scarlet fever it may be told by the absence of the



Fig. 153.—Peeling after erythema scarlatinoides. (Gately's case.)

tongue and throat symptoms that are characteristic of that disease, and usually also by the mildness of the constitutional symptoms. The catarrhal symptoms of measles and the presence of Koplik's spots will serve to differentiate this disease. Inasmuch as drugs frequently cause this eruption it is usually not necessary to differentiate this condition: however in the idiopathic cases there is usually a history of recurrence. Acute erythematous eezema usually involves a much smaller

surface, itches more and produces no constitutional symptoms. Erythema multiforme is likewise more limited in extent and usually shows some of the characteristic circular patches.

Prognosis.—Even in the severe cases the prognosis is good. However, there is an unfortunate tendency for the disease to recur.

Treatment.—There is no specific treatment. The patient should be kept quiet, the bowels opened and plenty of water given. The diet should be light. Calamine lotion will usually control whatever itching may be present. If any drug or article of food is apparently responsible it should be carefully avoided in the future.

ROSACEA.

Synonyms.—Acne rosacea; Gutta rosacea; Acne erythematosia.

Definition.—Rosacea is a passive congestion of the blood vessels of the face and nose, due to intestinal toxins. It may be complicated by pustules.

Occurrence.—Rosacea constitutes 1.5 per cent of all skin diseases. Fully developed cases are very rare in the negro.

Etiology.—This malady is very unusual in the young; it is commonly seen in women who are approaching middle life and in men of the same age. In women it is usually due to injudicious eating, especially of highly seasoned foods, or too hot foods, as well as to constipation or indigestion. Alcohol may play a very important factor: in fact the condition is usually called "whiskey drinker's nose" by the laity. The overindulgence in tea and coffee may be another cause. In men the element of exposure to severe weather undoubtedly plays a great part: it is well known that cabmen nearly always suffered from it: however they were also rather prone to indulge in alcohol so it is hard to estimate the relative value of alcohol versus exposure. Suffice it to say that the condition is often seen in those who never drink spirits.

Symptomatology.—The first condition noted is that of an occasional transient hyperæmia: these flushings become more and more frequent but examination fails to reveal any cutaneous abnormality. Later dilated venules can be distinguished upon the nose, cheeks, chin and middle of the forehead, and the congestion becomes permanent, although worse at times. This condition steadily becomes worse and there may be pustules in the sebaceous glands and orifices, which are usually markedly dilated. The condition then resembles an acne, but there are few blackheads, and the lesions do not form around comedones. As the last stage we find marked fibrous thickening of the

nose, associated frequently with sebaceous gland enlargement and infection. In this stage the condition is known as rhinophyma.

Pathology.—In the early stage the condition is simply one of venous engorgement. Later the veins and capillaries become permanently enlarged. About this time the sebaceous glands hypertrophy and may become infected. Still later there is fibrous tissue growth in addition to sebaceous growths. Unna is inclined to think that se-



Fig. 154.—Rhinophyma, before operation. (After Ohmann-Dumesnil.)

borrhœal infections may be the cause, as would be indicated by the greasiness of the skin and also the distribution of the eruption. Stelwagon believes that the seborrhœic condition is usually secondary.

Diagnosis.—The diagnosis is very easy. The only conditions that might be confused are seborrhœic dermatitis, lupus erythematosus and acne vulgaris. In the first named condition there are no enlarged blood vessels and it is usually associated with the same trouble in the scalp. Lupus erythematosus results in scar formation without ulceration, there are closely adherent white scales, the edge is somewhat

raised and sharply defined. Acne vulgaris occurs in younger people, there are numerous blackheads and papules and pustules always form around these comedones: in addition there are rarely any dilated venules.

Prognosis.—Much can be done for the vast majority of these cases, even when an advanced stage is reached.

Treatment.—The *constitutional treatment* is of the greatest importance. Any article of food that dilates the peripheral vessels must be avoided. As a general rule these prohibited articles are: alcohol,



Fig. 155.—Rhino-phyma, after operation. (After Ohmann-Dumesnil.)

spices, pepper, hot soups, tea, coffee and cocoa. The bowels must be kept open, preferably by the use of plenty of water and of foods that leave a large residue in the intestine.

External treatment is also of great importance: many cases in the early stage can be greatly benefitted by the use of the following:

R Potas. sulphuret.	ʒ i	4.
Zinci sulphat.	ʒ i	4.
Aquæ, q.s.	ʒ iv	120.

This should be left on over night.

In addition there should be used plenty of soap and water, and alternating douches of hot and cold water. Where there are pustules these should be opened and the contents evacuated. All blackheads should be removed as advised under *acne vulgaris*. Gilchrist considers the use of the *acne bacterin* to be of the greatest value: he states that he has repeatedly seen the follicular opening become much smaller under its administration. Sulphur and resorcin ointments are also of value in disposing of the seborrheic condition.

When the vessels have become permanently enlarged they must be destroyed in order to affect a permanent cure. This may be done in one of two ways. The simplest and quickest way in dealing with many small vessels is the method of linear scarification. The parts are sponged off thoroughly with alcohol, and multiple stabs made with a double-edged scarifier, the direction of the small incisions being at right angles to the direction of the vessels. While bleeding is very free this method is not especially painful, and there is no doubt as to its success. This treatment must be repeated a number of times. When the vessels are large they may be treated by means of the electric needle, which is either inserted into the lumen or in the coat of the venule. The needle must be attached to the negative pole, and the current applied until blanching of the vessel has taken place. Where there is much proliferation of the sebaceous glands the X-ray may be used, preferably in 3 Holzkmeeht unit doses, given about a month apart. Where there is an excessive growth of fibrous tissue this should be removed by the knife: the results are often excellent and great improvement is the rule.

CHLOASMA.

Synonyms.—Moth patches; Liver spots.

Definition.—Chloasma is an increased, localized deposit of pigment in the skin, probably caused by some toxin.

Occurrence.—Chloasma is a very common ailment of the skin, although by no means all of the cases come under treatment. Politzer states that this trouble constitutes about three-tenths of one per cent of all cutaneous disorders treated by American dermatologists.

Etiology.—Certain cases of increased pigmentation are due to the application of external irritants, such as mustard plasters, fly blisters, continued scratching, prolonged exposure to the sun's rays, etc. Other cases are due to adrenal insufficiency, syphilis, cancer, tuberculosis, and many other severe chronic diseases. Possibly the most important group of cases is due to some uterine or ovarian disturbance. Pregnancy is frequently accompanied by chloasma that

clears up after the birth of the child; chloasma may also accompany almost any other type of ovarian derangement. It is probable that with the exception of those cases directly due to external irritation the vast majority of all cases are caused by abnormalities in the internal secretions.

Symptomatology.—Women are much more frequently affected than are men, although the ailment does occur in the latter at times. It is rare in children and after the age of fifty. The increase of pigment usually affects the face, especially the forehead, the temples and the upper or posterior parts of the cheeks. The skin is absolutely normal, except for the increase in pigment, which may vary in degree, usually being of a pale yellowish-brown color. In the negro it may be almost jet black. There are no subjective symptoms.

Pathology.—The skin is normal except for an increased deposit of pigment in the rete, and perhaps in the upper portions of the corium.

Diagnosis.—If it be remembered that the surface of the skin is smooth and normal there is no condition with which chloasma can be confused.

Prognosis.—The disease is very rebellious to treatment. Where a definite cause can be found and corrected the outlook is good, but this is rather unusual. In the cases that come on during pregnancy spontaneous involution is the rule.

Treatment.—The only local way in which the condition can be cured is to peel off the pigment-containing layer of the skin. On the one hand the treatment must be deep enough to remove the pigment, and on the other hand not deep enough to cause scarring, hence must be undertaken with considerable caution, and at first upon only a small area. At times this may be satisfactorily accomplished by painting pure carbolic acid on the part until the characteristic white color appears, and then wiping off the acid with alcohol. Bichloride of mercury in the strength of one to five hundred, dabbed on several times a day, is used by many dermatologists. Peeling pastes, composed of salicylic acid and resorcin, in the usual strength of one dram of each to the ounce are sometimes useful. Low¹² states that carbon dioxide snow, lightly brushed over the part for a couple of seconds is excellent, an observation that I have not been able to confirm. Occasionally hydrogen peroxide will work well. Ovarian or corpus lutein extract is worth a trial.

Chloasma in Negroes.—According to my experience¹³ chloasma is more prevalent in negroes than in whites; while it is undoubtedly

¹² Low: Carbonic-acid Snow, 81.

¹³ Hazen: Jour. Cutan. Dis., 1914, xxxii, 705.

commoner in mulattoes, still it may affect the very dark, the patches being then of an inky blackness. Chloasma is much more difficult to remove in negroes than in whites, as any form of irritation is usually followed by an increased deposit of pigment, hence it is best left alone.

LEUKODERMA.

Synonyms.—Vitiligo; Leukopathia; Acquired piebald skin.

Definition.—Leukoderma is a loss of pigment in the skin, probably caused by some toxin.

Occurrence.—Leukoderma constitutes about one-fourth of one per cent of all skin affections. It is very much commoner in blacks than in whites.

Etiology.—For a number of years I have been much interested in leukoderma as it has run through a number of members of a family who were close associates. In no case did it affect those whom the members of this family married, hence it seems possible to rule out the parasitic theory. In all cases it followed some period of indisposition, usually one for which no cause could be assigned. It is noticeable that the lesions are most prevalent upon those portions of the body which are most exposed to the light, or which perspire most freely, as the genito-crural region. In several cases there was a sharp line of demarcation where the sleeve stopped.

Also I have recently seen two cases in which the trouble developed very acutely, one in a child who developed extensive leukoderma in two days, and the other where a negro man developed large patches within two or three hours, during epileptic attacks. These patches were observed to develop while the patient was in the hospital. According to my conception there is a pigmentolysin in the body, this toxin being activated by light. The favorite theory is that the disease is due to a nervous influence, but for this there is no support beyond the fact that Leloir and Chambrier¹⁴ have found atrophy of the terminal nerves in a case.

Symptomatology.—The disease starts in one of two ways, either by the appearance of an inflammatory macule, or insidiously with the gradual loss of pigment. When established there are irregular patches that are totally devoid of pigment. The borders of these are usually hyperpigmented for about a quarter of an inch, especially in those who are exposed to sunlight, not in those who remain within doors. As already noted these patches are most common upon the face, hands and genito-crural region, but may affect any part of the body. The hair growing from them is often white. The patches slowly increase

¹⁴ Leloir and Chambrier: Arch. de Physiol., 1881, 397.

in size, until they may cover considerable areas: there are a number of cases upon record where the entire body has lost its pigment. The patches always have convex edges. These depigmented spots are very susceptible to sunburn. The disease may remain stationary, and may even disappear, but usually gradually increases in size and number of lesions.

Pathology.—Sections show simply a loss of pigment, nothing else.

Diagnosis.—The diagnosis of leukoderma is usually easy. Leprosy



Fig. 156.—Leukoderma.

might be confused, but the patches are anæsthetic in this malady. Morphœa has a similar color, but the skin is indurated, which is not true of leukoderma. Surprising as it may seem chloasma is more apt to be confused than is any other disease, for it may be rather difficult to tell which is normal skin and which is diseased, and whether the normal color is light or dark. The diagnosis can be made by observing the shape of the patches, for the disease areas in either disorder show convex edges. If the light areas are concave then the disease is chloasma, if the light areas have convex edges the disorder is leukoderma.

Prognosis.—The outlook for permanent recovery is very unfavorable, but the disease in no way menaces life or health.

Treatment.—No form of treatment, either external or internal, has the slightest effect. The few cases that have recovered while under treatment would probably have recovered spontaneously. However, certain things may be done to render the patient less unsightly. In the first place he should not expose himself to sunlight, as tanning of the surrounding skin makes the spots very much more noticeable



Fig. 157.—Leukoderma.

and increases the pigmentation of the borders. If one endeavors to peel off the hyperpigmented border of the patch, following the method outlined under chloasma, there is apt to be a marked increase in the pigment, although this is not always true. The patches may be painted with walnut juice or with a weak solution of iodine in order to disguise them.

XANTHOMA.

Synonym.—Xanthoma tuberosum.

Definition.—Xanthoma is a disease due to the local extravasation

of a cholesterol-fatty-acid-ester, and characterized by the presence of multiple nodules, often of a yellowish color.

Occurrence.—Xanthoma is one of the rarest of dermatological diseases.

Etiology.—Pollitzer and Wile¹⁵ have recently shown that “Xanthoma tuberosum represents an irritative connective-tissue hyperplasia, in which the extravasation of cholesterol-fatty-acid-ester, present in excess in the blood, serves as the stimulus.”

Symptomatology.—The nodules are usually grouped but may be generally distributed. The disease usually develops in the course of several months, and may be associated with diabetes, or jaundice. The lesions are usually not over a third of an inch in diameter, but may be much larger, sometimes reaching a diameter of an inch or even more. They are usually yellow in color and soft in consistency. They should not be confused with the eyelid xanthelasma, which represent a totally distinct affection.

Pathology.—To further quote Pollitzer and Wile: “The first changes appear in the adventitial connective-tissue cells of the smallest blood vessels of the papillary and subpapillary layers, which take up the lipoids poured out from the vessels, proliferate and increase in size, ultimately forming the typical xanthoma cells. . . . The proliferation of the perivascular cells acts in turn as a stimulus to the development of connective tissue which, as fibroblasts and collagenous bundles, surrounds the nests of xanthoma cells and ultimately predominates over the true xanthomatous elements.” The xanthoma cells are large, roughly round or squarish cells with central nuclei that are arranged in nests in the corium.

Diagnosis.—The diagnosis must be made from various benign tumors. When the xanthoma lesions have their yellow color such a differentiation is easy, but when they are of the color of normal skin the diagnosis may be difficult if the tumors are scattered. Biopsy will settle the question.

Prognosis.—The prognosis is that of the underlying condition.

Treatment.—The treatment is that of the underlying condition. The growths may be excised.

¹⁵ Pollitzer and Wile: Jour. Cutan. Dis., 1912, xxx, 235.

CHAPTER XVII.

DISEASES DUE TO DISEASES OF THE BLOOD VESSELS OR LYMPHATICS.

VARICOSE ULCERS.

Definition.—A varicose ulcer is a loss of tissue, comprising both epidermis and corium, either directly or indirectly due to the poor circulation accompanying varicose veins.

Occurrence.—Varicose ulcers are very commonly seen in our surgical dressing rooms.

Etiology.—The underlying condition is always poor circulation due to varicose veins. A slight injury or superficial infection will refuse to heal and result in the superficial destruction of tissue.

Symptomatology.—Varicose ulcers nearly always occur upon the lower portion of the leg, being especially prevalent around the ankle. They may be large or small, but are usually shallow and of irregular outline, with foul bases. There is often considerable purulent discharge. The lesions are often extremely painful.

Diagnosis.—Varicose ulcers are easy to recognize because they are associated with varicose veins and occur upon the lower third of the leg. Syphilitic ulcers usually occur upon the upper third of the leg, are not associated with varicosities, and are clear cut and rather deep.

Prognosis.—While these ulcers are apt to heal temporarily, still they frequently break down at a later date.

Treatment.—The first essential towards cure is to keep the foot elevated as much as possible. Simple antiseptic dressings will suffice to cure some cases, but the number of drugs that have been recommended show that there is no specific. For further details as to treatment the reader is referred to a treatise upon surgery.

GANGRENE.

Gangrene is a local death of the tissues, that may either be due to physical causes such as corrosives, heat, electricity, etc., or to an obstruction to the blood supply. Probably the latter is the more common cause. Obstruction of the artery supplying the part may be caused by trauma, arteriosclerosis, endarteritis—usually syphilitic—, diabetes, thrombosis, embolism, Raynaud's disease, and pressure of tumors upon the vessels. In addition a very virulent local infection

may cause gangrene. Gangrene may be either dry or moist, usually dry when due to vascular causes. It then appears as a black or blackish mummification of the tissues, usually starting either at the toes or fingers. The treatment is fully given in the modern text books of surgery.

RAYNAUD'S DISEASE.

Synonym.—Local asphyxia.

Definition.—Raynaud's disease is a vascular change, without organic disease of the vessels, chiefly seen in the extremities, in which a persistent ischæmia or a passive hyperæmia leads to disturbance of function or to a loss of vitality with necrosis. (Osler.)

Occurrence.—Severe cases are rare, but I am convinced that there are a fair number of mild cases which are never diagnosed.

Etiology.—The disease is most frequently seen in those between ten and thirty years of age, but no age exempts one, for cases have been reported in both infants and old people. The exact cause is unknown, but the symptoms are due to changes in the calibers of the vessels.

Symptoms.—There are three stages of the disease, local anæmia, local congestion and gangrene. It is highly probable that the cases of "acrocyanosis," or persistent cyanosis of the extremities belong to this group. Anæmia may be present in all of the fingers and toes, or it may affect one finger only, as in a recent case of mine. The parts are white and very cold, both subjectively and objectively. Some patients never get beyond this stage, but in the majority of instances the anæmia will be succeeded by a period of intense congestion, often associated with considerable pain. Later the parts become a deep blue color. In some instances the hands and feet are of a peculiar mottled appearance, becoming anæmic when elevated. This is usually accompanied by itching and burning. As a result of the cyanosis vesicles may form and necrosis later take place. The attacks may pass off for a time, but eventually return. The fingers are usually involved, next in frequency the toes, but also the nose, ears, cheeks and perhaps other portions of the body.

Pathology.—No organic disease of the blood vessels is present. The anæmia is due to a local constriction of the blood vessels, the hyperæmia to a wide dilatation.

Treatment.—Inasmuch as many of the cases occur in the flabby, who do not take a sufficient amount of out-of-door exercise, it is essential to correct this condition. Cushing advocates the local use of a tourniquet applied tight enough to cut off the blood for a few

minutes, and then its sudden release, when it is noted that the part usually flushes with blood. Amyl nitrite might be tried for the anæmia or the intravenous use of adrenalin for the cyanosis. During cold weather the parts must be well protected.

ELEPHANTIASIS.

Synonyms.—Elephantiasis Arabum; Pachydermia; Elephant leg; Barbadoes leg.



Fig. 158.—Elephantiasis. (Collection of Dr. Richard L. Sutton.)

Definition.—A chronic enlargement, usually of the leg, caused by obstructed lymphatics.

Occurrence.—The disease is rather uncommon.

Etiology.—The condition may be caused by any obstruction to the return flow of the lymph. Some cases are due to infection with

filaria, some to deep removal of the lymph glands, some to recurring lymphangitis of an infectious nature, and some to cancer.

Symptomatology.—The first local symptom is œdema, which usually develops slowly. The amount of systemic disturbance depends entirely upon the cause of the obstruction; in the cases of streptococcic lymphangitis it is often considerable. The œdema becomes permanent, and the skin later begins to thicken and finally becomes very rough and dry. There is not only œdema but also a great thickening of the fibrous tissue. An enormous size may be reached and the patient rendered helpless.

Pathology.—There is œdema and proliferation of the subcutaneous fibrous tissue. The epidermis is hypertrophied, but the glandular elements are usually atrophied. There are often areas of chronic inflammation.

Diagnosis.—The diagnosis of elephantiasis is an easy one to make, but the finding of the cause is not always so easy. The filaria cases come from the tropics. Probably most of our cases in the United States are due to streptococcic infections.

Prognosis.—The outlook for a return of the part to normal is very bad. However, many of the cases can be greatly helped.

Treatment.—Various more or less inefficient forms of treatment are advocated in the text books, but the truly proper form is never mentioned. It is advocated to keep the leg tightly bandaged and elevated, even to amputate it or to ligate the femoral artery. The use of thiosinamine in subcutaneous or intramuscular injections has been warmly endorsed, but curiously enough no one has ever mentioned the work of Handley¹ in treating œdema of the arm secondary to operations for cancer of the breast. The proper treatment for elephantiasis is the following. Make two lines of incisions in the skin of the leg, one line down the inside of the leg and the other down the outside. These incisions must be deep and arranged in a continuous, but interrupted straight line from the lower portion of the body to the foot. Then thread in silk sutures, fanning them out at the foot and at the top. Those running up the inside of the leg should be fanned out in the groin, the other in the flank or buttock. These sutures will supply an artificial lymphatic chain and take care of most of the œdema. Kerr has operated upon one of our cases at the Freedmen's Hospital with very favorable results, although some of the silk sloughed out, having become infected, for it is very difficult to properly disinfect an elephantiasis leg. For the betterment of the fibroid condition it is possible that fibrolysis might be used. Fibrolysin

¹ Handley: *Lancet*, March 14, 1908, 783.

(Merck) is a water soluble combination of thiosinamine with sodium salicylate, and should be given in two cc. doses either every day or every other day for a month, when the injections are stopped for a week and then resumed. When this method is combined with bandaging there is usually marked diminution in the size of the leg according to Castellani,² so much so that it may be necessary to remove long elliptical strips of skin. A combination of these various forms of treatment should do much good in the chronic cases where there is no recurring infection.

² Castellani: Jour. Cutan. Dis., 1908, xxvi, 225.

CHAPTER XVIII.

DISEASES DUE TO NERVE CHANGES.

So far but few diseases have been proven to be of nervous origin: as a general rule the expression "neurodermatosis" means nothing but ignorance of the etiology. However some diseases of the skin are definitely caused by nervous influences, in some cases from definitely established nerve changes and sometimes from what we are pleased to designate functional changes.

HERPES ZOSTER.

Synonyms.—Zoster; Shingles; Zona.

Definition.—Herpes zoster is an acute inflammatory disease of the skin, caused by lesions in the root ganglion, and characterized by groups of vesicles upon inflamed bases, arranged along the course of a cutaneous nerve.

Occurrence.—Herpes zoster constitutes .9 per cent of all diseases coming to the dermatologist for treatment.

Etiology.—Zoster is much commoner in men than in women. It is most common during the second and third decades, but may occur at any age. The true cause of the disease is absolutely unknown, but there is a growing tendency to believe that it is infectious. Montgomery¹ states: "The late W. G. Hay, while working with me, formulated the following reasons for considering zoster a bacterial disease:

"There are definite epidemics of herpes zoster; the disease has a sudden onset; there is a general systemic disturbance with rise of temperature; there is more extensive adenitis than seems justified in so local a trouble; the course of the disease is self-limited; and the patient seems to be immune from further attacks."

Montgomery believes that the infection may take place through either the skin or the mucous membrane, that the organism reaches the posterior root ganglion by way of the nerve roots, and that the seat of the trouble is in the ganglion, as is universally conceded.

Symptomatology.—Preceding the cutaneous eruption there may be some slight discomfort along the course of the nerve, even going

¹ Montgomery, Jour. Cutan. Dis., 1913, XXXI, 156.

so far as to be distinctly neuralgic in character. The eruption makes its appearance suddenly. It is usually stated that the vesicles appear along the course of a cutaneous nerve, but as Crocker² well points out, this is not true, for the lesions are situated along the cutaneous fibers originating from one posterior root ganglion, hence may be along the course of two cutaneous nerves, although always predominating along one. Almost any portion of the body may be involved, but undoubtedly the commonest location is along the course of the intercostal nerves. It is not rare for zoster to occur in the supraorbital region, and it not infrequently affects the limbs, although the hands and feet are usually spared. When the eyeball is involved very serious consequences may



Fig. 159.—A typical case of herpes zoster.

result. The eye may be destroyed, or meningitis may ensue. The mucous membranes of the mouth or nose may be affected, rarely to the exclusion of the skin. The characteristic skin lesions are situated at intervals along the course of the nerves, the entire skin surface supplied by them does not become the site of vesiculation. The primary lesions are rather superficial vesicles that arise upon an inflamed base. These vesicles vary in size from 1 to 6 mm., at first are discrete but may become confluent, are filled with a clear fluid and are surrounded by an inflammatory areola. The vesicles do not rupture spon-

² Crocker: Diseases of the Skin.

taneously, but usually dry up, becoming scabby by the end of ten days or two weeks. Occasionally the lesions are papular (abortive zoster), or very rarely become hemorrhagic. At times the involved area may become gangrenous; this seems to occur more frequently in the supraorbital type than in any other. A few instances of bilateral zoster have been reported and one or two instances where it was generalized.

In addition to the skin symptoms there are also some constitutional disturbances; at the onset there may be fever and malaise. There is nearly always some glandular enlargement, and there is usually neu-



Fig. 160.—Herpes zoster with lesions on arm.

ralgic pain along the infected nerves. This pain may be very severe or comparatively slight.

Pathology.—The vesicles themselves usually start in the lower portion of the rete. The epithelial cells in the wall undergo ballooning and finally assume various shapes. Multiple nuclear fragments are present in most of them, and have frequently been mistaken for parasites. The corium shows marked inflammatory changes, the blood vessels are dilated and there is marked infiltration of the upper portion of the corium with small round and fixed tissue cells. The contents of the vesicles are composed of ballooned epithelial cells, normal epithelial cells, and polymorphonuclear leucocytes together with some small round cells.

In the posterior root ganglion of the filaments supplying the affected area are found degenerated nerve cells.

Diagnosis.—Diagnosis is very easy. Groups of vesicles along the course of one or two cutaneous nerves, the lesions being distinctly unilateral, and accompanied by neuralgic pains, give a picture that cannot be mistaken. Upon the face, or in very mild cases it might be confused with a simple herpes, but when the lesions of this disease occur upon the face they are rarely unilateral. Herpes simplex of the limbs may be very difficult to differentiate from zoster.

Prognosis.—The outlook in herpes zoster is nearly always favorable, except in the severe cases that affect the eye. Even the gangren-

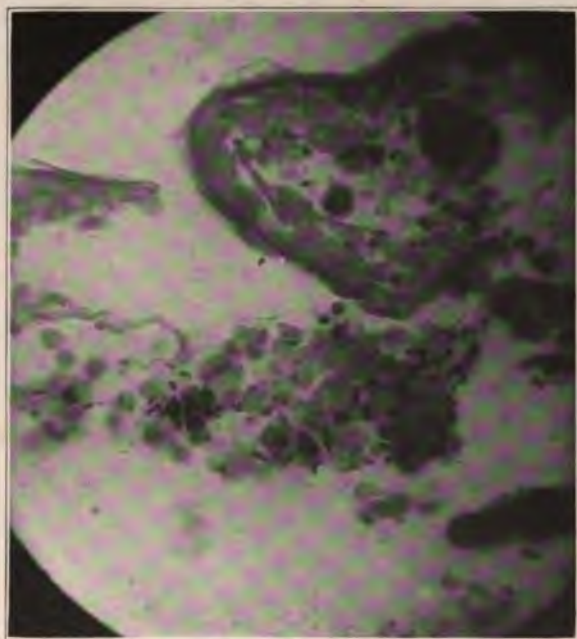


Fig. 161.—Oil immersion photomicrograph of edge of vesicle in herpes zoster, showing degenerated cells.

ous cases usually recover. It must always be remembered that severe neuralgic pains may persist for months after all other evidences of the disease have disappeared.

Treatment.—In the mild cases the external use of calamine lotion is all that is required. Where there is much local pain in the lesions they may be covered with collodion, or the vesicles may be opened and an orthoform ointment used, usually in a twenty per cent

strength. In these painful cases I usually order the following prescription:

R Aspirin	3 i	4.
Acetphenetidi	3 ss	2.
Codein. sulph.	gr. iii	4. 2

Quinine is used by many physicians, and also zinc phosphide in 1/5 gr. doses, but neither has given me good service. The continued pain that follows zoster is probably best treated by means of a mild galvanic current, the positive pole being placed over the ganglion and the negative pole over the site of the lesions. The high frequency has also been recommended, but I must confess that I have seen both forms of treatment fail much oftener than they have helped.

HERPES SIMPLEX.

Synonyms.—Fever blister; Herpes.

Definition.—Herpes simplex is an acute inflammatory disease, characterized by groups of vesicles upon inflamed bases, and probably due to nerve changes.

Occurrence.—About three-fourths of one per cent of skin ailments are herpes, but in reality the disease is much commoner than this, for the majority of the cases are never seen by a physician.

Etiology.—The etiology of this condition is not absolutely clear. Sehamberg states that lesions have been found in the posterior root ganglion that could not be told from the lesion of zoster, Kopytowski³ has found histologic analogy between the lesions of herpes and of zoster, and Ravaut and Darre⁴ have found marked changes in the cerebrospinal fluid. On the other hand the lesions are not unilateral, they have a marked tendency to recur, and some are definitely produced by eating some particular substance. It would seem as though several of the root ganglia might be affected by some toxic substance, for it is evident that the disease cannot be a form of zoster.

Symptomatology.—Before the eruption appears there is usually some local burning; then a small clump of vesicles appears, which may number but one or two or as many as fifty, and there may be but one group or there may be three or four. At times there are simply scattered isolated vesicles. These lesions are common upon the lips, where they constitute the well known "fever blisters" of the laity, upon the mucous membranes of the mouth where they are known as "canker sores," and upon the mucous membranes of the genitalia (herpes progenitalis).

³ Kopytowski: Arch. f. Dermat. u. Syphil., 1904, lxxviii, 55, 387.

⁴ Ravaut and Darre: Ann. de dermat. et de syphil., 1904, 480.

They are also fairly common upon the face, and rarely occur upon other portions of the skin. At first the vesicles are discrete with clear contents, but later they frequently coalesce and the contents may become milky or purulent. As a rule the lesions are fairly deep and do not rupture spontaneously, usually drying up into crusts. There are as a rule no systemic disturbances. However herpes of the mouth is frequently associated with some gastric disturbance, fever blisters with colds, and other types with acute infections of varying natures such as pneumonia, malaria, or cerebrospinal fever.

Pathology.—Unna states that the vesicle develops just beneath the rete. The prickle cells, forming the roof of the blister, are much degenerated; they are increased in size, but their contour and prickles are well preserved. He considers the process a true coagulation necrosis of the upper prickle layer, and believes that this explains the absence of the nuclei. The cutis is œdematous; the blood vessels are dilated and there is a perivascular infiltration with leucocytes and small round cells.

Diagnosis.—Crusted patches of impetigo contagiosa often resemble those of herpes, but in the former disease there are scattered patches, which are lacking in the latter. Impetigo is rarely seen upon the lip or the genitalia, while herpes is common in these localities. Canker sores may be confused with the mucous patches of syphilis, but there are several marked differences. In the first place canker sores have a short course while mucous patches are very chronic; in the second place the syphilitic lesions usually are not surrounded by a marked inflammatory areola, while herpes usually have this zone surrounding them; and lastly mucous patches are especially common in the angles of the mouth, while herpes are rather rare here. The genital lesions are not difficult to recognize unless they have been cauterized, in which case it may be impossible to tell them from either chancres or chaneroids except by the latter course of the trouble. The presence of neighboring glands may be of great value in diagnosing the more severe infections.

Prognosis.—The prognosis is invariably good, but there is considerable tendency for the trouble to recur.

Treatment.—Stelwagon believes that fever blisters can often be aborted if spirits of camphor be applied in the earliest stages, but I must confess that I have never been able to obtain these results. While the lesions are vesicular they may be covered with calamine lotion, but when crusting has taken place a mild ointment such as the zinc ointment is preferable. Canker sores may be touched with silver nitrate, usually with marked benefit, for they heal much more speed-

ily under this treatment. Cracks at the corner of the mouth or upon the lips may be covered with the tincture of benzoin, this always being applied while the parts are distended. Progenital herpes are treated by absolute cleanliness, and by the use of mild dusting powders or of calamine lotion.

When there are repeated attacks the general condition of the patient requires careful investigation: always exclude malaria.

ACANTHOSIS NIGRICANS.

Definition.—A chronic disease of the skin, characterized by bronzing and frequently by the presence of papillary hypertrophy, and caused by involvement of the sympathetic nervous system, almost invariably by abdominal neoplasms.

Occurrence.—The disease is rare. There are detailed descriptions of only a little over fifty cases upon record (White⁵).

Etiology.—Pollitzer⁶ states positively that acanthosis nigricans is a symptom of a disorder of the abdominal sympathetic nervous system. In the majority of adults this is due to cancer of some of the abdominal organs, but in the juvenile cases the exact cause is still unknown, although Darier has suggested benign tumors, congenital malformations or adhesions from the peritoneum.

Symptomatology.—As already indicated there are two classes of cases, the juvenile, which usually commence well before puberty, and the adult cases, which usually develop in those past forty years of age. In both classes of cases there is first noticed an excess of pigment in the axillary and inguinal regions, and perhaps beneath the breasts, as well as in some of the other flexor surfaces of the body. The color of the pigment is a dirty yellow, grading up to varying shades of a deep brown. At times it may be almost general, but is usually most pronounced in the sites indicated above. Shortly after the development of the pigmentation the flexor areas begin to show cutaneous hypertrophy, of the type usually called papillomatous, more properly epithelial for the changes in the papillae are secondary. These overgrowths may also develop upon the face, neck, lips and mouth. Palmar and plantar keratoses are common, and there may be loss of hair and atrophies of the nails. The juvenile cases usually run a mild course, while the adult cases end fatally, due to carcinoma of the viscera.

Pathology.—Histological examination shows that the horny layer

⁵ White: Jour. Cutan. Dis., 1912, xxx, 179.

⁶ Pollitzer: Jour. Amer. Med. Assn., 1909, viii, 1369.

is markedly thickened, that the prickle cells are enlarged, that pigment cells are present both in the rete and corium, and that there is some infiltration of the corium, some of the cells being mast cells.

Prognosis.—The juvenile cases drag along for many years; the adult cases die from abdominal cancer.

Treatment.—In the early cases various types of peeling ointments may be used, and White had some success with thyroid extract; dried suprarenal glands might be well worth trying. In the adult cases an exploratory laporatomy should be insisted upon at once as an occasional case might be saved in this way.

PRURITUS.

Definition.—Pruritus is an itching disease of the skin, without any anatomical explanation.

Occurrence.—Pruritus constitutes about one and one-half per cent of all skin disorders according to the figures of the American Dermatological Association. It is questionable if these figures are not rather high, for they may include some cases of urticaria and scabies.

Etiology.—Some cases are due to jaundice, and some to various drugs such as opium and its derivatives; others to an abnormally dry condition of the skin, and some to various types of digestive disturbances; other cases follow eczema, scabies and various itching dermatoses, but in the majority of instances no cause can be found.

Symptomatology.—Various types of pruritus may be recognized; the generalized, that following bathing (bath pruritus), that occurring in winter (pruritus hiemalis), that occurring in the aged (pruritis seniles), pruritis ani, and pruritus vulvæ.

In the generalized idiopathic pruritus there is a more or less generalized, usually very severe itching, that lasts for many years, in spite of all attempts to stop it. As a result of the scratching there may result various types of secondary lesions, scratch marks, eczema, and superficial infections, and pigmentation or depigmentation.

In some individuals bathing will give rise to marked pruritus, which persists for possibly half an hour. This type seems common in the young, and exists to a slight degree in many people, especially those who are under a mental strain.

The winter pruritus is often due to an abnormally dry condition of the skin. The itching is usually worse when the patient disrobes at night. The limbs are more affected than the body. Certain cases are undoubtedly due to woolen underwear, and others to exposure to winds, while some of the cases in the back literature were probably

due to various animal parasites—the itch mite, *pediculus* and *pediculoides ventricosus*.

Senile pruritus is usually associated with some degenerative changes in the skin.

Pruritus ani may be due to intestinal parasites, especially the pin worms, to local disease of the anus or rectum, such as fissures or varicose veins, or no cause may be found. Pruritus vulvæ may likewise be due to local disturbances, especially masturbation, or no cause may be found. In all cases a careful examination of the urinary and genital passages must be made, and especially must diabetes be searched for. Murray believes that a streptococcus infection is the true cause.

Pathology.—The only cutaneous changes are those due to secondary lesions.

Diagnosis.—Pruritus must be differentiated from the other diseases that cause universal itching, namely urticaria, scabies and pediculosis corporis. In urticaria there is wheal formation when the skin is rubbed with a blunt instrument; in scabies the location of the lesions between the fingers, on the flexor surfaces of the wrists and elbows, in the axillæ, under the breasts in women, lower portion of the abdomen, buttocks, inner surfaces of the thighs, and genitalia of males will serve to make the diagnosis clear; in pediculosis there are linear scratch marks between the shoulder blades and the parasites can often be found in the seams of the underclothing.

Localized forms may cause some difficulty, inasmuch as they are not infrequently accompanied by an eczematous eruption due to scratching, but the persistence of the itching after the disappearance of the visible cutaneous manifestations will serve to make a diagnosis.

Prognosis.—The prognosis must always be guarded, unless a cause can be found.

Treatment.—In all cases of pruritus a careful physical examination should be made, for in some instances disease can be found. Jaundice must always be ruled out. Patients should always live under the best hygienic circumstances, and should eat and drink in proper amounts and of proper materials. The bowels must be kept open. Tea and coffee, likewise alcohol, should be practically prohibited. The best drug in internal treatment is the tincture of *cannabis indica*, which should be given in 10-30 minim doses three times a day. It may be necessary to try aspirin, phenacetin or codeine to control the itching in the very severe cases. The bromides are apt to increase it. Opium preparations must be used with care as they may aggravate the condition rather than aid it. I have seen good results in one or

two cases from large doses of hexamethylenamine. General galvanization may aid.

Externally many antipruritic drugs may be employed, among them calamine lotion, menthol in alcohol or bay rum, or thymol or resorcin lotions. A small amount of glycerin should be added to all lotions to prevent undue dryness. Simple dusting powders aid some in mild cases.

In the local varieties it is likewise essential to rule out any organic disease of the neighborhood. The same preparations may be tried as for the generalized pruritus, but tar may likewise be used and is sometimes very valuable. In the severe cases small doses of the X-ray, repeated from time to time, may control the symptoms, but it must always be remembered that such fractional treatment may favor the development of cutaneous cancer. The sensory nerves supplying the part are sometimes cut, and this usually gives relief, although recurrence may take place at a later date. Murray⁷ claims that a streptococcus infection is responsible for most of the cases of pruritus ani, and that he has gotten excellent results from the use of a streptococcus bacterin. In view of the rather intractable nature of the trouble this treatment should be given a further trial.

TROPIC ULCER.

Trophic ulcers result as the consequence of injury to, or disease of, the nerve supplying the part, usually the palm of the foot, but at times a finger, or even some other portion of the skin. They may occur with syphilis, leprosy, anterior poliomyelitis, syringomyelia, tabes, dorsalis, peripheral neuritis and diabetes. The ulcers are intractable, and often have to be excised, or curetted and cauterized.

⁷ Murray: Jour. Amer. Med. Assn., 1911, Ivii, 1913.

CHAPTER XIX.

PAPULO-SQUAMOUS ERUPTIONS OF UNKNOWN CAUSE.

Six diseases may be classed under this heading: psoriasis, chronic scaly erythrodermias (parasporiasis), pityriasis rosea, lichen planus, granuloma annulare, and lupus erythematosus. All differ from each other in many respects, and it is more than probable that a different cause is responsible for each of them.

PSORIASIS.

Synonym.—*Lepra* (of old authors).

Definition.—Psoriasis is a chronic inflammatory disease, characterized by various sized papules covered with white scales, and of an unknown etiology.

Occurrence.—Psoriasis is a common disease; it forms about 2.7 per cent of all dermatoses according to the figures of the American Dermatological Association.

Etiology.—The cause of psoriasis is still absolutely unknown. It is slightly more common in males than in females, and is not common before the age of three or after the age of forty. It is usually much more severe in winter than in summer, more common in those who are confined indoors, and rarely affects exposed surfaces. It is possibly more common in those who are not in good health. Arthritis is fairly often found associated with it, and sometimes gout. It is occasionally found in members of the same family,¹ as in the remarkable instances recorded by Engman.² The disease is rare in the negro, and is stated by Bulkley³ to be exceptional in the warm climates of the East. The very careful investigations of Schamberg⁴ and his associates would seem to show that there is an associated retention of nitrogen and that the patients do better when put upon a nitrogen free diet. However Pollitzer⁵ and others cannot concede this, and I agree with them. The question as to the parasitology of psoriasis has been thoroughly discussed by both Pollitzer⁶ and Scham-

¹ Knowles: Jour. Amer. Med. Assn., 1912, lvi, 415.

² Engman: Jour. Cutan. Dis., 1913, xxxi, 559.

³ Bulkley: Jour. Cutan. Dis., 1910, xxxviii, 33.

⁴ Schamberg: Jour. Cutan. Dis., 1913, xxxi, 698, 802.

⁵ Pollitzer: Jour. Cutan. Dis., 1913, xxxi, 913 (discussion).

⁶ Pollitzer: Jour. Cutan. Dis., 1909, xxvii, 483.

berg,⁷ and more recently investigated by Schamberg.⁸ Interesting facts are that psoriasis has not as yet been successfully inoculated into the lower animals and that Gilchrist's animals either did well or else died from staphylococcus albus infections. Only exceptionally is the disease autoinoculable, and there are very few cases of apparent infection or contagion upon record. The disease is not so much helped by the external application of antiseptic remedies as by chrysarobin which Schamberg⁹ has shown not to be antiseptic, but rather a reducing agent. At the same time certain facts must be borne in mind. In the first place it is often absolutely impossible to make a differential diagnosis between acute cases of psoriasis and of seborrheic dermatitis, and the latter is certainly of parasitic origin; not only do the two diseases look alike to the eye, but their



Fig. 162.—Imbricated scales in a typical patch of psoriasis.

pathology is essentially the same. In the second place, if we would carefully examine other members of a family in which psoriasis occurs we would often find mild lesions of psoriasis, often unnoticed; and lastly psoriasis is often helped by staphylococcus bacterius as Gilchrist has shown. Personally I am inclined to believe that psoriasis is another form of seborrhœa and that it is due to external infection.

Symptomatology.—Psoriasis always commences as a papular eruption, and is dry and scaly. At first the lesions are very small

⁷ Schamberg: Jour. Cutan. Dis., 1909, xxvii, 496.

⁸ Schamberg: Jour. Cutan. Dis., 1913, xxxi, 698, 802.

⁹ Schamberg: Jour. Cutan. Dis., 1915, xxxiii, 1.

and but slightly elevated, but they usually increase in size rather rapidly and may eventually form large plaques. The lesions of psoriasis have certain sites of predilection, namely the extensor surfaces of the limbs, especially the elbows and knees, the scalp, and to a lesser extent the trunk. They are rare upon the hands and face. The spots may vary in number from two or three to hundreds, and in size from a sixteenth of an inch to many inches. They are covered thickly with imbricated, glistening, whitish scales, which when removed leave minute bleeding points. The eruption may be acute, but is usually chronic, and is usually much worse in winter than in summer. Various special types are described: *psoriasis punctata*



Fig. 163.—An acute case of psoriasis guttata. (Gilchrist's case.)

when the lesions are not over a third of an inch in diameter; *psoriasis guttata* when the lesions are from one-half to one inch in size; *psoriasis circinata* when the lesions clear up in the center; *psoriasis gyrata* when serpiginous areas are formed; *psoriasis en plaques* when there are large areas; *psoriasis rupioides* when very thick, hard, laminated crusts are formed. The lesions of psoriasis often form along the lines of scratches, or at the site of trauma. Upon the scalp they form serpiginous areas, and often extend down upon the forehead for the fraction of an inch: there is usually no loss of hair. The mucous membranes are usually not affected, although I have seen one instance where there were a number of lesions upon the glans penis. At times, especially about the joints, deep fissuring takes

place, and it may be difficult to bend the part. There is usually no itching.

Pathology.—The horny layer is much thickened, but the cells are not so completely cornified as in the normal. One characteristic is the rows of small mononuclear cells that occur between the horny cells. In nearly all instances small abscesses may be seen in this layer, in spite of the fact that we think of psoriasis as a dry disease. The rete is thickened, and the intrapapillary processes are elongated in many instances. The granular layer may be missing. The prickle and basal cells are fairly normal, but the rete is in-



Fig. 164.—Discoid psoriasis in a negress.

vaded by small round cells, and occasionally by fixed tissue cells. The papillæ are enlarged and their blood vessels and lymphatics are dilated, while there is a perivascular infiltration with small round cells, which emigrate upward towards the rete. Unna claims that the venous capillaries are more affected than are the arterial. There are very few polymorphonuclears, mastcells, or plasma cells present. The histological picture is essentially the same as that of seborrheic dermatitis.

Diagnosis.—Most cases of psoriasis are easy to recognize. The distribution is characteristic, for the elbows, knees and scalp are es-

pecially apt to suffer while the exposed surfaces are unaffected. The character of the lesions, their size and shape and their thick covering of whitish scales is also rather definite. However it is sometimes impossible to make a differential diagnosis between an acute case of psoriasis and one of seborrheic dermatitis. Usually seborrheic dermatitis affects the flexor surfaces rather than the extensor, the face is often involved, the scales are thinner than in psoriasis, greasier, not so white and glistening and may form circinate patches.

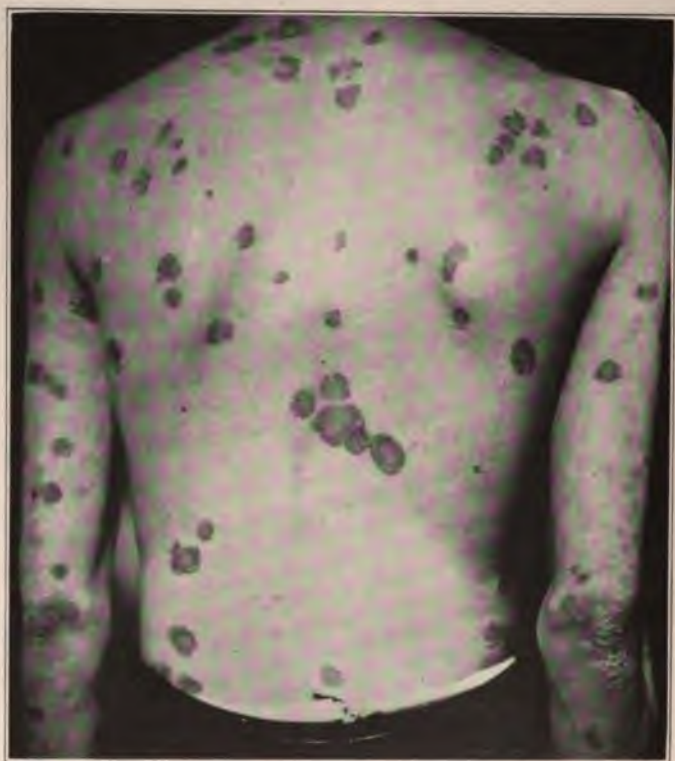


Fig. 165.—Annular psoriasis. (Gilechrist's case.)

From eczema the diagnosis is not difficult for psoriasis is a dry disease, while eczema nearly always has periods of oozing or weeping. Eczema does not show the small rounded sharply-defined patches that are nearly always found in psoriasis; eczema usually itches while psoriasis does not; eczema favors the flexors; the scales in eczema are not white and feathery as in psoriasis. The papulo-squamous syphiloderm may bear a very close resemblance, but has not the same distribution, often affects the exposed surfaces, espe-

cially the palms, the scales are more closely adherent and leave no bleeding punctæ when removed, there is more infiltration and other signs of syphilis are often present. The lesions of lichen planus may resemble a psoriasis punctata, but are angular, often arranged in rows, umbilicated, of a violet color and are not scaly to any extent. Pityriasis rosea is more inflammatory than psoriasis, its lesions come out much more rapidly and are not so scaly.

Prognosis.—It is usually possible to temporarily cure psoriasis, but the disease has a most unfortunate tendency to recur. As later life is reached the disease often disappears spontaneously. Out-of-



Fig. 166.—Disseminated patches of psoriasis. (Collection of Dr. Robert G. Washburn.)

door work in a sunny climate is often of great aid in preventing attacks.

Treatment.—The general hygiene of the patient should always be looked after, for it is well known that the eruption is worse when the vitality is lowered. I have known of several instances where vacations promptly caused the disappearance of nearly all the lesions. In still other cases total abstinence from alcohol is of the greatest aid. Either mental strain or physical overwork render it much more difficult to treat psoriasis. Plenty of sunlight is a great factor in successfully combating the malady; fresh air alone will not do, sunlight is required. I have seen case after case where a series of sun baths

would clear up in one week lesions that had persisted for months. In excessively stubborn lesions an ordinary large hand magnifying glass may be used to render the rays more powerful and the effect



Fig. 167.—Psoriasis en plaques.

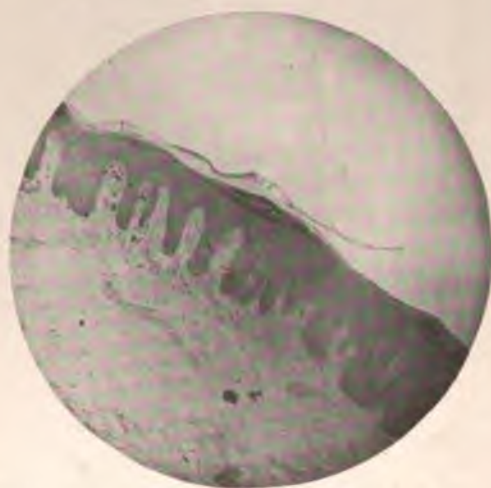


Fig. 168.—Histopathology of chronic psoriasis. Note the abscesses in the horny layer. Also note resemblance to seborrheic dermatitis.

is often excellent. In the absence of sunlight the X-ray may be used with considerable satisfaction: two or three large doses (2 to 3 Holz-

knecht units at intervals of one month) are infinitely superior to a series of small doses.

It is very doubtful if diet has any great effect upon the lesions of psoriasis. For years Bulkley¹⁰ has maintained that a rice diet would cure practically every case, but the other New York dermatologists have never been persuaded that he was correct. In addition there are many persons who much prefer psoriasis to rice. Schamberg and his coworkers feel that a diet in which there is but little protein or nitrogen often does very well, but in his cases there was usually a changed environment to consider.

Internal medication has but little effect. I have never seen the slightest benefit from any of the arsenic preparations, although they are almost universally employed by general practitioners and many dermatologists. According to both Gottheil¹¹ and Fox¹² autoserum therapy will often work wonders in psoriasis: they both claim that many inveterate cases have been cured, temporarily at least. The technique is simple. About 50 c.c. of blood are drawn off from a vein into a cylindrical glass bottle, which must be sterile. This is then centrifugalized until the serum is thoroughly separated, and the resulting 15 to 25 c.c. of serum is then reinjected, either intravenously or intramuscularly. This is repeated on the average of three times at intervals of from three to five days. A weak chrysarobin ointment is then applied and usually clears up the skin in a most satisfactory manner. The injections alone are not of benefit. Winfield¹³ has reported some encouraging results from colonic irrigation.

The external treatment of psoriasis is likewise demanded in every case. The most essential thing about external treatment is to keep it up until every vestige of the eruption has disappeared, often not an easy matter. Undoubtedly the best drug is chrysarobin. This may be applied in the form of an ointment, commencing with the strength of only 10 grains of the drug to an ounce of base. If the skin tolerates this well the strength may be gradually increased up to a ten per cent strength. In using chrysarobin three things must be remembered: first, that the drug will often irritate the normal skin; secondly, that it may cause a marked albuminuria; and third, that it is very dirty. In my opinion the best way to apply chrysarobin is to make a saturated solution of it in chloroform (1½ parts of chrysarobin to 30 parts of chloroform) and paint this on the diseased areas with a cotton swab, and then cover with a thin coating

¹⁰ Bulkley: Jour. Amer. Med. Assn., 1911, lvii, 714.

¹¹ Gottheil and Sattenstein: Jour. Amer. Med. Assn., 1914, lxiii, 1190.

¹² Fox: Jour. Amer. Med. Assn., 1914, lxiii, 2190.

¹³ Winfield: Jour. Amer. Med. Assn., 1912, lix, 416.

of flexible collodian. If the psoriasis be extensive it is best not to use chrysarobin, but to employ one of the following prescriptions:

R Hydrar. amm.	3 i	4.
Acidi salicylici	3 ss	2.
Ung. aq. ros., q.s.	5 i	30.

R Olei cadini	3 i	4.
Acidi salicylici	3 ss	2.
Ung. aq. ros., q.s.	5 i	30.

The most useful drugs upon the glabrous skin are ammoniated mercury, salicylic acid, sulphur, resorcinol, oil of cade and tar. When the scalp or face are involved chrysarobin should never be prescribed, for it is very irritating to both eyes and scalp. Oil of cade seems to work especially well in these locations.

In the very acute forms one may employ a sulphur ointment or lotion, the lotio alba being a good example:

R Potas. sulphuret.	3 i	4.
Zinci sulph.	3 i	4.
Aquæ, q.s.	5 iv	120.

Gilchrist has had good success with the *staphylococcus albus* bacterin in several cases of this type, and they seem to be worth trying.

In all instances there should be frequent bathing, with the use of a moderately strong soap. The green soap is excellent.

Psoriasis in the Negro.—It has often been stated that psoriasis is practically unknown in the negro, either African or American: many American dermatologists state that they have never seen a case of this dermatosis in a colored person. However, Chalmers tells me that he has seen a number of instances in native Africans, and the disease undoubtedly does occur in the American negro, although not as frequently as among whites. In 2,000 consecutive cases of skin disease in each race I found 82 cases of psoriasis in whites and 8 in negroes, and Howard Fox's figures gave about the same proportion in the colored. In every other respect psoriasis runs the same course in the two races.

CHRONIC SCALY ERYTHRODERMIAS.

Synonyms.—Parakeratosis variegata; Parapsoriasis; Les erythrodermies pityriasiques en plaques disséminées (Brocq); Psoriasisform dermatitis; Pityriasis lichenoides chronica; Lichen variegatus (Crocker); Xantho-erythrodermia parstans.

Definition.—Parapsoriasis is a chronic scaly disease of the skin, the individual lesions of which show very little tendency to change.

Etiology.—The etiology is absolutely unknown.

Symptomatology.—As Sutton¹⁴ well points out, it is possible that several different diseases are included under this heading, but all have certain characteristics in common, namely a chronic, disseminated, papular or maculo-papular eruption, the individual lesions of which do not tend to disappear spontaneously, and which are very resistant to treatment. Itching is usually absent. Like psoriasis these lesions may be in very small, widely disseminated areas, in a little larger patches, not so widely spread, or in a few large plaques. All are covered by closely adherent whitish scales, which do not leave bleeding points when removed, and which do not elect the extensor areas.

Pathology.—The stratum corneum is thickened; the granular layer is only fairly well preserved; the spino-celled layer is thickened, due to oedema; in the corium the blood vessels, especially the papillary ones, were markedly dilated, and there was a perivascular infiltrate composed chiefly of small round cells. The papillæ are elongated.

Diagnosis.—Parapsoriasis must be distinguished from psoriasis, pityriasis rubra pilaris, chronic lichen planus, seborrheic dermatitis and the premycotic stage of mycosis fungoides. If attention be paid to the points already mentioned under symptomatology psoriasis can usually be easily differentiated. Pityriasis rubra pilaris begins as a distinctly follicular eruption, and some of these lesions can usually be seen, even in a chronic case where there are large plaques. In lichen planus the purplish color and the presence of some angular papules serve to make the diagnosis. In seborrheic dermatitis there are usually lesions upon the scalp, and the condition tends to be more inflammatory. In the premycotic stage of mycosis fungoides there is nearly always intense itching. Squamous eczema could hardly be confused, as there is usually the history of weeping or oozing and the presence of itching; then too the lesions tend to change in form rather rapidly.

Prognosis.—The larger lesions are very difficult to influence.

Treatment.—Tar, salicylic acid, ammoniated mercury and resorcinol may be tried, but usually fail. The use of large doses of the X-ray or of carbon dioxide snow would appear the most rational form of treatment.

¹⁴ Sutton: Brit. Jour. Dermat., 1913, xxv, 115.

PITYRIASIS ROSEA.

Definition.—Pityriasis rosea is an inflammatory disease of the skin, characterized by a more or less generalized macular or papular scaly eruption, and of unknown etiology.

Occurrence.—The disease is not especially rare; it forms about one-half of one per cent of all skin affections.

Etiology.—The disease is most frequent in young adults. Only exceptionally does it occur in more than one member of the same family. However at times there appear to be veritable epidemics of it, for many cases may be seen within a few weeks, and then no more for months. The disease rarely recurs. As to the essential



Fig. 169.—Pityriasis rosea, with unusually large lesions in a negro boy.

cause there are two theories, one that it is caused by a fungus similar to ringworm, and another that it is due to a systemic infection. Of the first there is no good proof, for parasites have been found in only a few cases. Of the second there is better indirect proof, for the disease often begins with a sore throat and some fever or malaise, and the eruption is distinctly self-limited.

Symptomatology.—Usually there is first noticed a herald patch, an erythematous scaly lesion of a reddish color that appears usually upon the flank, but that may, however, appear upon almost any por-

tion of the skin except the face, hands or feet. A day or two later there is a sore throat and some general malaise, and then the widespread eruption suddenly manifests itself. The eruption is most profuse upon the trunk, but the upper portion of the arms and legs are also affected. The face, hands and feet are practically always spared, but the rest of the body may be involved. There are no lesions of the mucous membranes. The eruption may assume one of several types,¹⁵ a macular variety that clears in the center in the classical way, a maculo-papular variety, and a distinctly papular form.

In typical text book cases the lesions are oval, varying in size from one-half to one inch in length, and the long axes of the lesions are



Fig. 170.—Pityriasis rosea, showing a condition simulating eczema beneath the arms. (Gilchrist's case.)

parallel with the direction of the ribs, a very helpful point in diagnosis. At first the color is bright rosy red, the lesions are sharply defined and are distinctly scaly. In the course of a few days central involution takes place and the centers of the patches have a distinctly yellowish hue, while the edges remain rosy. In some instances these lesions may attain a considerable size, occasionally being as much as three inches in length.

In the *maculo-papular type* the lesions have the same general dis-

¹⁵ Fox: Jour. Amer. Med. Assn., 1912, lx, 493.

tribution. However they are somewhat smaller than the macular lesions, usually not being over half an inch in length. The lesions are scaly from the onset, and are not always as well-defined as are the macular ones, but usually there is a fair line of demarcation. The color is rosy throughout the course, there is no central involution and no yellowish shade. At times the eruption may be so profuse as to cover most of the skin, but this is rather unusual.

In the papular variety the papules are an eighth to a quarter



Fig. 171.—Unusually pronounced case of pityriasis rosea of the maculo-papular type. (Gilchrist's case.)

of an inch in diameter, are well defined, not arranged in groups, and are usually scaly from the onset. The color is a rather warm tone of pink. As a rule there is no itching in any of the forms.

Pathology.—The horny layer is somewhat thickened, the nuclei are preserved and there is present both fibrin and some spindle-shaped fixed tissue cells. The granular layer is missing in some places and almost lacking in others. The prickle-celled layer is very œdematous, and the cells are often distorted in shape. There are some small vesicles in this layer, also a deposit of fibrin and marked

invasion with spindle cells. The basal layer is well preserved. In the corium there is considerable perivascular infiltration, chiefly with fixed tissue cells, but also with small round cells. The papillae are oedematous, and are more or less infiltrated with fixed tissue cells. The deeper portions of the corium are normal.

Diagnosis.—Pityriasis rosea is frequently mistaken for syphilis, both by general practitioners and by genito-urinary specialists. However it is usually not difficult to tell the difference. In the first place other signs of syphilis are lacking. In the second place the



Fig. 172.—Usual type of pityriasis rosea in a negro, lesions composed of confluent miliary papules.

lesions are of a brighter hue and are scaly almost from the onset: the finding of a herald patch is characteristic. In the macular and maculo-papular varieties the long axes run parallel with the ribs, which is certainly not true of lues. In the papular variety the lesions do not group as they do in syphilis, nor is there the same tendency for polymorphism to occur. In syphilis, too, there is usually more infiltration.

Seborrheic dermatitis may markedly resemble pityriasis rosea, but there is no herald patch, the lesions do not run in the same direction,

and the face and hands are not always spared. In the vast majority of instances the lesions do not develop so rapidly.

The lesions of ringworms are rarely so profuse as those of pityriasis rosea, nor are they so evenly scattered: they usually involve the face. A scraping from a suspected patch and a microscopical examination will speedily settle the diagnosis.

In psoriasis the patches are covered with profuse white scales which when removed leave bleeding points. It is very unusual for the eruption of psoriasis to develop so rapidly as the lesions of pityriasis rosea.

Prognosis.—Pityriasis rosea is a distinctly self-limited disease,



Fig. 173.—A pronounced case of papular pityriasis rosea. (Gilchrist's case.)

the lesions usually disappearing in from two to six weeks, hence the outlook is always good.

Treatment.—There is no specific treatment. I am certain that no external treatment is of the slightest avail, unless there be itching present. Internal treatment consists entirely in keeping the bowels open, drinking plenty of water, eating in moderation, and living a sensible life.

Pityriasis Rosea in the Negro.—The macular type of the eruption is unusual, but may occur and the lesions be very large. The common type is the maculo-papular, and here there is a tendency for the neck, and possibly the dependent portions of the cheeks to be af-

feeted. There seems to be more systemic disturbance in this race than in the white, for a number of my cases have been really ill for a time. The disease is not quite so common as in the white race.

LICHEN PLANUS.

Synonyms.—Lichen ruber planus; Lichen psoriasis; Lichen planus of Wilson.

Definition.—Lichen planus is a chronic, inflammatory disease, of unknown etiology, and characterized by a more or less profuse eruption of flat, angular papules.



Fig. 174.—Lesions of lichen planus becoming confluent. This case was entirely cured by one exposure to four Holzknecht units of the Röntgen rays.

Occurrence.—The disease is about as common as pityriasis rosea, forming about one-half of one per cent of all dermatoses. It is less common in the negro than in the white.

Etiology.—The disease is most common in young adults, but may occur in either the very young or very old. Two attacks may occur in the same individual. It is especially apt to arise when the patient feels a bit below par, often from nervous strain. The exact

cause is unknown, but Sutton¹⁶ has recently suggested that it has many of the characteristics of a spirochæte infection, and certainly the prompt way in which some of the cases respond to mercury would bear this out. In two very recent cases I found, by means of the dark-



Fig. 175.—Typical lesions of lichen planus.

field illuminator, a very small spirochæte in a few lesions. It is still too early to say whether or not this has any significance.

Symptomatology.—Sutton¹⁷ has recently written an excellent



Fig. 176.—Linear arrangement of papules in lichen planus.

paper upon some of the bizarre and unusual forms of this disorder, for not all cases run a classical course. In typical cases the erup-

¹⁶ Sutton: Jour. Amer. Med. Assn., 1914, lxiii, 133.

¹⁷ Sutton: Jour. Amer. Med. Assn., 1914, lxii, 175.

tion appears rather suddenly; it is distributed chiefly upon the extensor surfaces of the leg and the flexor surfaces of the arm, and to a less extent upon the trunk. The face, neck and hands are usually spared. Papules are often found upon the buccal mucous membrane. The primary lesion is a reddish papule, varying in size from 1 to 5 mm. in diameter. The papule is distinctly angular, is often umbilicated after it has remained for a few days, and shines by reflected light. The color soon becomes a distinct purplish tint, especially after lesions have coalesced. The arrangement of the lesions is also characteristic—rows of papules, sometimes confluent, can be found in practically every case. Ordinarily these lesions will disappear in the course of a month or two, but a number of interesting variations may occur in the meanwhile. There is commonly very intense itching.

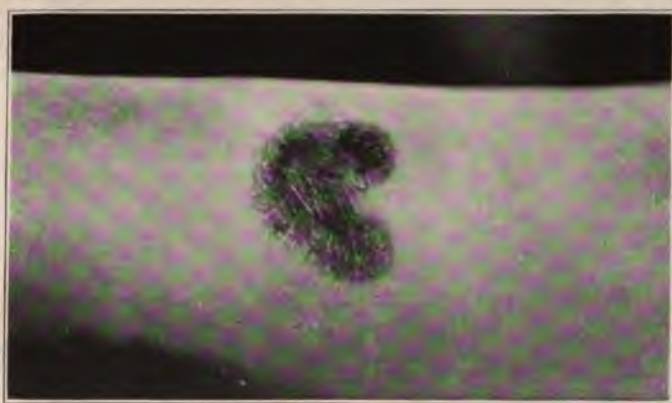


Fig. 177.—Hypertrophic lichen planus. (Collection of Dr. Robert G. Washburn.)

In some instances there is a central horny plug, coming from a follicle. The lesions are apt to coalesce so as to form patches that almost resemble the surface of a nutmeg grater.

Vesicles and even bullæ may occur, but are usually of no importance.

Annular lesions may arise in one of two ways, either by a number of papules forming a ring, or by one papule clearing in the center and spreading peripherally.

Lichen planus atrophicus is a variety in which the lesions become atrophic and leave white scars.

Lichen planus hypertrophicus is a type in which the lesions become much larger than normal, usually protruding above the level of the normal skin for a distance of an eighth to a quarter of an

inch. They are purplish in color, sharply-defined, and are thickly covered with scales. In size they vary from one-fourth to one-half an inch, but often become confluent so as to form large patches. The itching is usually considerable. The legs are more apt to be affected than any other part of the body.

The so-called *lichen planus obtusus* is probably not a lichen at all, and will be described under the title of prurigo nodularis.

Zoster-like lichen planus means that the distribution is along the course of one of the cutaneous nerves.

Acute lichen planus is a condition in which there is an acute eruption of round, pink papules, often arranged in rows and accompanied by considerable febrile disturbance. Montgomery and Alder-

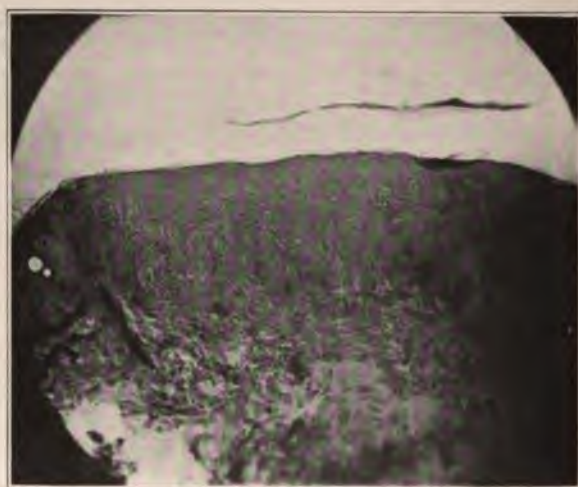


Fig. 178.—Histopathology of a lichen planus papule.

son¹⁸ have recently studied such a case and have called attention to the fact that in many ways it resembles an acute infection.

Pathology.—The pathology of lichen planus is well illustrated by Sutton and also by Fordyce.¹⁹ The histological picture is absolutely distinctive. In the ordinary lesions the horny layer is slightly thickened, the granular layer well preserved, and the prickle layer slightly thickened and not staining as intensely as is usual. The basal layer is practically obliterated by the characteristic infiltration of the upper portion of the corium. This infiltration is very dense and usually obscures all other structures. The cells consist of small round

¹⁸ Montgomery and Alderson: Jour. Amer. Med. Assn., 1909, lili, 1457.

¹⁹ Fordyce: Jour. Cutan. Dis., 1910, xxviii, 57.

and of elongated fixed tissue types. The rete may be very slightly infiltrated by them, but not to any great extent. In the hypertrophic variety there is a great increase in the horny layer, the rete is much thickened, and the interpapillary processes are thick and extend downward much more than usual, but the dermo-epidermic line is well preserved. The upper part of the corium is infiltrated in a manner characteristic of lichen planus, although possibly not quite so thickly as in some of the more acute forms.

Diagnosis.—Ordinary cases of lichen planus are usually not difficult to diagnose, if it be kept in mind that the lesions are widespread, chiefly located upon the flexor surfaces of the limbs, body and mucous membrane of the cheeks, that the lesions are often arranged in rows and that the individual lesions are angular, often umbilicated, and that when they form patches they have a distinctly purplish tint. The condition which is most apt to be confused is papular eczema, and I must confess to having recently seen two cases in which the correct diagnosis was only made by biopsy. However as a general rule the lesions of eczema are not so widely disseminated, are not arranged in rows, rapidly tend to become confluent, and are neither angular or umbilicated. The confluent patches do not often have the peculiar purplish tint so characteristic of lichen planus. Psoriasis may occasionally be mistaken for lichen planus, but the lesions usually predominate upon the extensor surfaces and scalp, do not affect the mucous membranes of the mouth, itch not at all, and are thickly covered by soft white scales; neither are all of the lesions of the same size, for some speedily enlarge, nor are the lesions angular or umbilicated.

Seborrheic dermatitis has larger and flatter lesions than has lichen planus, they are not angular or umbilicated nor are they situated upon the mucous membranes, but there are usually some in the scalp, where lichen lesions never develop.

Either a follicular or a small papular syphilide might exceptionally be confused, but only by an inexperienced man, for neither the distribution nor the character of the lesions resemble those of lichen, and there are usually other signs of syphilis present.

In the acute form of lichen planus the diagnosis must be made largely from the fact that the lesions are arranged in typical rows, for as a general rule they have few of the other characteristics of lichen planus lesions; however occasionally the lesions are almost characteristic of lichen planus, but often they are simply pale pink, rounded papules. In the vast majority of instances they do not occur upon the mucous membranes.

The lesions in which horny plugs occur must be diagnosed from keratosis follicularis (Darier's disease), and from pityriasis rubra pilaris. In practically all cases enough of the typical lesions can be found to do this, but in exceptional instances it may be necessary to perform a biopsy, the lesions in this variety of lichen planus showing the characteristic infiltration of the upper part of the corium.

The atrophic lesions may resemble either localized patches of scleroderma (white spot disease) or the rare atrophic areas left by various other diseases. The history of the case will usually make the diagnosis plain.

The hypertrophic lesions may be simulated by syphilis, erythema nodosum, and prurigo nodularis. However the long duration and the purplish color will usually serve to make a correct diagnosis possible. Where there is any doubt a biopsy should be performed and a microscopical examination made.

Prognosis.—The acute cases usually recover, but some of them certainly die. The ordinary run of cases all recover, although the disease may itch intensely and last for some little time. The hypertrophic cases are usually very chronic but can be helped.

Treatment.—In the treatment of lichen planus I have gradually come to depend upon the internal administration of mercury, and the external use of the X-ray, together with antipruritic ointments. In many instances mercury seems to have just as specific an effect upon the lesions of lichen planus as it has upon the lesions of syphilis. Recently I have seen a severe case of six months duration, and that was continually getting worse. The arms were given a 4 Holzknecht unit dose of the X-rays and $\frac{1}{4}$ grain of the protiodide was given three times a day. In one week there was a great improvement, not only upon the arms but upon the whole body. Such results are by no means unusual. The best way to control the itching is by fairly full doses of the ray, and by the use of an ointment similar to the following:

R	Phenolis	m x	.7
	Acidi salicylici	5 i	4.
	Ung. aq. ros., q.s.	3 i	30.

In the hypertrophic cases the use of the X-ray is about our only available means of treatment, although strong tar preparations may aid an occasional case.

GRANULOMA ANNULARE.

Synonyms.—Ringed eruption of the fingers; Lichen annularis.

Definition.—Granuloma annulare is a rare dermatosis character-

ized by the presence, usually upon the back of the hand, of whitish or pinkish nodules that form rings or segments of rings.

Etiology.—The cause is unknown. It is more common in children and young adults than in the old, and occurs with equal frequency in the two sexes.

Symptomatology.—Upon the back of the hand or of the fingers there gradually develop a few small nodules: more appear in close approximation, until finally either a ring, or a segment of a ring, is formed, the center being entirely clear. These rings are rarely over one inch in diameter, their nodular edge is white or pinkish and distinctly scaly. Usually there are from two to six lesions. The lesions may persist indefinitely or they may spontaneously involute. There are no subjective symptoms.

Pathology.—Hartzell's²⁰ recent account of their pathology is probably the best, although it does not cover so many cases as does Graham Little's²¹ exhaustive clinical and pathological summary. The pathological changes are chiefly if not exclusively confined to the corium. To quote Hartzell: "Beginning in the subpapillary portion and extending down to the hypoderm was a moderately dense, fairly well circumscribed cellular exudate composed chiefly of lymphocytes and spindle cells of the connective-tissue type with a few polymorphonuclears and some large epithelioid cells. The infiltrate was densest about the vessels and the coil glands and their ducts. . . . The most striking feature, however, was an area of necrosis occupying the central part of the exudate."

Diagnosis.—Annular lichen planus or annular syphilis might bear some resemblance, but in both of these diseases there would be lesions in other parts of the body that would render diagnosis possible.

Prognosis.—The lesions may undergo spontaneous involution, or they may be cured, some by one means, some by another.

Treatment.—In several instances X-ray treatment has been of the greatest benefit, but a number of cases have been made worse by it. Sutton has had rather good results with carbon dioxide snow.

LUPUS ERYTHEMATOSUS.

Synonyms.—Seborrhœa congestiva; Lupus erythematodes; Lupus sebaceus; Ulerythema centrifugum.

Definition.—Lupus erythematosus is a disease of unknown etiology, characterized by reddish patches covered with whitish scales.

²⁰ Hartzell: Jour. Amer. Med. Assn., 1914, lxiii, 230.

²¹ Little: Brit. Jour. Dermat., 1908, xx, 213, 248, 281, 317.

These patches terminate in scar formation, although there has been no preceding ulceration.

Occurrence.—Lupus erythematosus forms about one-third of one per cent of all dermatological cases.

Etiology.—Lupus erythematosus usually comes on before middle life. It is probably a trifle more common in women than in men. It is probably somewhat less common in negroes than in whites, although not markedly so. Inasmuch as, in this race, it attacks those who have not been subject to any of the signs or symptoms of rosacea, this condition cannot be considered as a predisposing factor as is sometimes done. There is no good proof that an underlying tuberculosis infection is responsible: it is true that the majority of the



Fig. 179.—Lupus erythematosus.

subjects of this malady react to tuberculin, but the majority of all adults will give a similar reaction. Freshwater's²² admirable paper should be consulted by those interested.

Symptomatology.—There are two distinct varieties of the disease, one the chronic where the lesions are confined to a small portion of the skin, and second the acute, where the lesions are widely disseminated. The latter is distinctly rare.

In the chronic localized form the lesions usually are situated upon the cheeks, nose, ears or scalp. Quite frequently a butterfly-shaped patch is seen, involving the bridge of the nose and the adjacent part

²² Freshwater: *Brit. Jour. Dermat.*, 1912, xxiv, 57, 99.

of both cheeks. As a rule the lesions are roughly symmetrical and are few in number, there rarely being more than six or eight patches. At first a reddish papule forms. This soon becomes scaly and spreads peripherally, leaving scar tissue behind. The follicular mouths near the growing edge are usually markedly distended. The scales are closely adherent and are white in color. The disease spreads but slowly and it is usually several years before the lesion becomes more than an inch in diameter. The mucous membranes are occasionally affected, as Kren²³ has shown. As a rule there is but little itching present and no constitutional symptoms.

The disseminated form is always serious, for in the majority of instances death has ensued, either from a rapidly fatal intoxication, or from a somewhat slower process. The lesions may develop from a

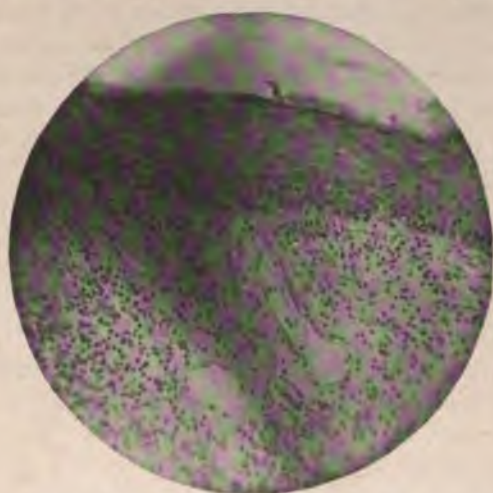


Fig. 180.—High power photomicrograph of a lesion of lupus erythematosus.

preexisting chronic case, but more generally arise *de novo*, usually upon the backs of the fingers and of the hands. The lesions then develop upon the face and later upon other portions of the body. They appear as small papules, that are red, fairly well defined, only slightly scaly, and that grow but a little in size. The center of the spots may show an atrophic tendency. These lesions may disappear spontaneously, but new ones take their place. New lesions are apt to come out in crops, often associated with a marked febrile reaction. There may be considerable burning and itching.

Pathology.—The horny layer is thickened, while the upper portion of rete is about normal, except for some slight infiltration with

²³ Kren: Arch. f. Dermat. u. Syphil., 1907, lxxxiii, 13.

small elongated cells. The lower portion of the rete shows considerable degeneration as illustrated in the photomicrograph (Fig. 180), œdema being very constant. Many of the follicles are dilated and filled with horny plugs. The wavy dermo-epidermal line is flattened out in most specimens. The small blood vessels are markedly dilated and apparently more numerous than usual, and there is a perivascular infiltration with small round and fixed tissue cells and sometimes with plasma cells. There are no polymorphonuclears and no giant cells. There may be considerable œdema of the corium. There are lymph channels running through the cellular infiltrate.

Diagnosis.—The chronic cases of erythematous lupus are easy to diagnose if one remembers the cardinal points, namely, appearance upon the face, especially nose, cheeks, ears and scalp, the rough symmetry, the closely adherent white scales, the dilated follicles and the scar production without ulceration. Syphilis of the nodular type that produces scars without ulceration is the disease most apt to be confused, but in this malady the follicles are not dilated, the spread is more rapid, the scales are not so closely adherent, and the distribution is not apt to be that of lupus erythematosus. The acute cases may be simulated by either psoriasis or erythema multiforme. However the latter is never scaly nor does it show an atrophic center. Psoriasis does not show an atrophic center. In case of doubt a biopsy would clear the diagnosis.

Prognosis.—In the chronic cases the disease eventually disappears spontaneously, but always with the formation of considerable scar tissue. Under treatment the spread can be limited to smaller areas, although the condition is often very rebellious. The acute disseminated cases are prone to end fatally.

Treatment.—For the chronic cases one form of treatment has practically displaced all others, namely freezing with carbon dioxide snow. This should be applied for from twenty seconds to a half-minute with fairly firm pressure. With this form of treatment cosmetic results are just as good as the natural scar that results from spontaneous healing, and the patches can be confined to much smaller areas of the skin. Cauterization with carbolic acid, the acid nitrate of mercury, lactic acid and similar preparations are not nearly so effective, although sometimes valuable. If the condition becomes acutely inflammatory a soothing lotion, such as calamine, should be employed, but I am by no means satisfied that any external ointment or lotion has the slightest effect upon the disease, for it should always be remembered that the condition is a capricious one.

In the acute cases calamine lotion should be tried externally, and the general condition treated symptomatically.

CHAPTER XX.

EXFOLIATING ERYTHRODERMIAS.

Exfoliation of the skin is secondary to many of the common and some of the rare diseases of the skin. A generalized squamous eczema, an extensive psoriasis, ichthyosis, dermatitis exfoliativa neonatorum, pemphigus foliaceus, scarlet fever, erythema scarlatinoides and occasionally lichen planus will often cause extensive peeling. However there are a few other diseases that are often known as dermatitis exfoliativa.

PITYRIASIS RUBRA OF HEBRA.

Definition.—Pityriasis rubra is a generalized exfoliating disease of unknown etiology, in which the skin becomes atrophic.

Occurrence.—The disorder is rare.

Etiology.—The cause is unknown. It has been noted to occur in those who were not constitutionally fit, although it may occur in the healthy.

Symptomatology.—The disease usually develops slowly, and is characterized by universal involvement. The skin becomes thin and atrophic, and is thickly covered by heavy scales. The hair and nails are often lost. The general health usually suffers severely and death is apt to ensue, either from exhaustion, or from intercurrent infection.

Pathology.—The horny layer is much thickened and the cells usually retain their nuclei. The granular layer is often missing, or at least very thin. The rete is likewise thinned, and the interpapillary processes often missing. The corium shows evidences of a chronic inflammation, and there may be an excess of fibrous tissue. The glands are atrophied.

Prognosis.—The prognosis is usually unfavorable.

Treatment.—Patients must be kept at rest, and given plenty of light, air and nourishment. Mook¹ lauds the use of quinine in large doses, from 30 to 80 grains daily, and a number of other observers have likewise reported good results from this drug. Continuous baths may do much good. If there be any moisture present White² believes in enveloping the patient in borated talcum powder.

¹ Mook: Jour. Cutan. Dis., 1908, xxvi, 408.

² White: Jour. Cutan. Dis., 1912, xxx, 705.

DERMATITIS EXFOLIATIVA.

Synonym.—Acute general dermatitis.

Definition.—Dermatitis exfoliativa is an acute or chronic, localized or generalized, exfoliating disease of the skin in which no atrophy takes place. There is very great confusion as regards the true status of this disease. Of exfoliating dermatoses there are a number of different groups. In the first place there is the group that arises as the sequence of psoriasis, eczema, pemphigus foliaceus or similar diseases, and which is probably simply an advanced and exaggerated stage and not a new condition at all. The second condition is the one known as erythema scarlatinoides, of which there are two forms, first the mild recurrent attacks and second the severe attacks that often follow drug taking or the ingestion of some article of food that is poisonous to the individual. In the third group is



Fig. 181.—Dermatitis exfoliativa. (Strobel's case.)

found the pityriasis rubra of Hebra, which has just been described. This form is characterized by atrophy of the skin and a very severe course, usually terminating fatally. In the fourth group we may place the generalized dermatitis exfoliativa of Wilson.

Etiology.—The cause is unknown, however I personally feel that it is due to some circulating toxin.

Symptomatology.—The disease may begin with mild constitutional symptoms or it may come on insidiously. In either case there is first an inflammatory condition of the skin that resembles an erythematous eczema and which in the course of a few days comes to involve the entire body. The mucous membrane may or may not be affected, and the hair and nails may exceptionally be lost. Associated with these symptoms there may also be fever, rapid pulse and some malaise, often definitely associated with the intestinal tract. The disease may be acute, subacute or chronic. In some cases ap-

parent recovery will ensue, but then there will come a relapse: the disease is very treacherous. The skin itself peels in either large or small scales, usually of a dirty gray color. The condition is usually dry but there may be some serous oozing, probably due to infection. There may be no subjective symptoms or there may be either moderate or severe itching.

Special Varieties.—It is questionable whether the pityriasis rubra of Hebra should be classed as a separate disease or as a variety of this malady. Bowen³ is inclined to think that there is no hard and fast dividing line. While it is probable that he is right still I am inclined for the present, at least, to sharply separate the two, for the picture of atrophy occurring in Hebra's type seems fairly distinct.

One variety that is worth mentioning is the type where there is a localized peeling of the skin in some small portion of the body. In one case that I have seen the skin of the palms peeled regularly twice a year. This was accompanied by constipation and indigestion and some headache and general malaise.

Pathology.—The urinary findings are of interest. As would be expected there is a marked diminution of urinary nitrogen, and the uric acid is apt to be excessive according to Tidy.⁴ The amount of fluid excreted in the urine is also usually low.

The pathology of the skin is similar to that described under pityriasis rubra.

Diagnosis.—As already indicated, the diagnosis must be made from exfoliating conditions due to eczema, psoriasis, ichthyosis and pemphigus foliaceus. Erythema scarlatinoides and pityriasis rubra must also be excluded. In the first mentioned disease the diagnosis must usually be made from the consideration of the history of the case and from its very chronic character. Erythema scarlatinoides is usually more acute in character and the skin does not show any infiltration such as is usually found in dermatitis exfoliativa. In pityriasis rubra the atrophy can usually be easily distinguished.

Prognosis.—The prognosis must always be guarded, for the disease is apt to relapse, and secondary infections to occur, either cutaneous or of a generalized nature.

Treatment.—The treatment is identical with that detailed under pityriasis rubra.

³ Bowen: Jour. Cutan. Dis., 1910, xxvii, 1.

⁴ Tidy: Brit. Jour. Dermat., 1911, xxiii, 133.

CHAPTER XXI.

FOLLICULAR KERATOSES.

The follicular keratoses, namely *keratosis pilaris*, *pityriasis rubra pilaris* and *keratosis follicularis* do not seem to bear any relationship to the keratoses of the epithelium proper, hence are considered in a special chapter.

KERATOSIS PILARIS.

Synonyms.—*Pityriasis pilaris*; *Lichen pilaris*; *Xerodermia pilaris*.

Definition.—*Keratosis pilaris* is a disease of the hair follicles, characterized by the protrusion of spine-like bodies from them, and of an unknown etiology.

Occurrence.—Moderate degrees of this disorder can often be seen if one searches carefully for them. However they are usually so mild that the subjects pay no attention to them, and they rarely consult the dermatologist because of this trouble.

Etiology.—The trouble is more commonly seen during childhood and adolescence. It is more severe during the winter months, especially in those who do not bathe any too freely. Also it is more often associated with a dry than with a moist or greasy skin.

Symptomatology.—The outer surfaces of the thighs and upper arms are the sites usually affected. Protruding from many of the larger hair follicles may be seen small conical projections of a grayish color, that can easily be picked or squeezed out, leaving a minute opening. The skin both looks and feels rough, but there is usually no sign of inflammation.

Pathology.—There is a hyperkeratinization of the upper portion of the follicle, and the plug consists entirely of keratinized epithelial cells.

Diagnosis.—*Pityriasis rubra pilaris* might be confused, but is usually of greater extent and development, and there is scaly thickening of the palms and scaliness of the scalp. It can scarcely be mistaken for follicular syphilis or *lichen serofulosus*.

Prognosis.—The ailment can usually be helped, but not entirely cured.

Treatment.—Frequent bathing, combined with the use of alkaline soaps will usually benefit the condition greatly. A mild salicylic acid ointment is often a great aid.

PITYRIASIS RUBRA PILARIS.

Synonyms.—Lichen psoriasis; Lichen ruber (Hebra); Pityriasis rubra; Lichen rubra acuminatus (Kaposi).

Definition.—Pityriasis rubra pilaris is a disease of unknown etiology, characterized by papules situated at the follicular mouths and often coalescing so as to form large patches.

Occurrence.—The disease is rather rare. It forms about 0.027 per cent of all cutaneous diseases.

Etiology.—The etiology is unknown. As Stelwagon says: "Neither sex, heredity or color seems to have any etiological significance. It has been observed in quite young children . . . in the majority of cases it has its beginning in childhood or early youth."

Symptomatology.—The disease usually begins with a scaly condition of the scalp and a thickening of the palms. Then follicular papules, of a reddish or even blackish color, appear upon the dorsal surface of the fingers and hand, and then later upon the trunk, face and limbs. At first the papules are extremely small, pointed, discrete, pale red in color and pierced by a central hair. Later they coalesce into large scaly patches, the scales being branny. The scalp hairs are not changed, but the nails often become atrophic. There are no subjective symptoms. Exceptionally there may be considerable increase in pigmentation.

Pathology.—The malady begins with a hyperkeratinization of the follicles, similar to that observed in keratosis pilaris. Later all of the epithelial layers are thickened, especially the horny layer. The follicles contain horny plugs and are surrounded by small round-celled infiltration. The glandular elements are unchanged.

Diagnosis.—In well developed cases the diagnosis is usually easy. In the early cases the trouble may be confused with keratosis follicularis, but the difference in distribution should serve to differentiate the two. When plaques are formed psoriasis or lichen planus may be suspected, but as a rule characteristic lesions may be found, especially upon the backs of the fingers. The violet color of lichen planus is missing and the abundant white scales of psoriasis are lacking.

Prognosis.—The disease is very rebellious to treatment. The cases can often be helped but almost never cured. Spontaneous involution may occur, but relapses are common.

Treatment.—The general health must be looked after and faulty hygiene corrected. Hebra believes that large doses of arsenic should

be given, although most men have failed to get any results with this treatment. Various stimulating ointments should be tried.

KERATOSIS FOLLICULARIS.

Synonyms.—Ichthyosis follicularis; Darier's disease; Psorospermiosis.

Definition.—Keratosis follicularis is a chronic disease characterized by the presence of follicular keratoses, the lesions usually being most marked upon the face, axillæ and midlines of the chest and back.

Occurrence.—The disease is very rare.

Etiology.—The etiology is unknown. It usually starts in early life and more males than females are affected. In some cases it seems to affect several members of one family, but whether this is due to heredity or contagion is not as yet settled, although the former seems the more probable. Darier believed that he had discovered the cause of the disease in some peculiar bodies looking like psorosperms or coccidia, but which were later proven to be cell degenerations.

Symptomatology.—The lesions first arise upon the face and look much like those of keratosis pilaris. Later they increase in size and are somewhat greasy. The lesions soon assume a distinctly brownish color, and the amount of scalliness increases. Then the lesions become confluent and the general appearance is that of a scaly patch. The disease spreads slowly and other parts of the body become involved, so that in the course of several years much of the body may be affected. The parts most involved are the chest, axillæ, genitocrural region and limbs. Frequently there is a keratosis of the soles, less frequently of the palms. When the crusts are removed it can be seen that follicular papules are still to be distinguished and that from the center of each papule protrudes either a fatty looking or else hardened plug. In the axillæ the lesions are very apt to become verrucose. In some instances there may be actual keratotic outgrowths, and in Wende's¹ case these eventually became cancerous.

Pathology.—The affection is a keratosis of the epithelial layers of the mouths of the pilosebaceous ducts, but other positions of the epidermis may secondarily become involved. In the deeper rete layer are found large, peculiar degenerated cells, with huge vacuoles in which lie degenerated fragments of nuclei. There is a slight round-celled perivascular infiltration.

Diagnosis.—In the early stages this malady closely resembles ordinary keratosis pilaris except that it has an absolutely different sit-

¹ Wende: Jour. Cutan. Dis., 1908, xxvi, 512.

uation, namely on the face. Pityriasis rubra pilaris might be confused, but in this disorder there are not so many isolated lesions after the disease has made some progress, large plaques usually being formed. Verrucose lesions are not present in pityriasis rubra pilaris.

Prognosis.—The disease usually progresses slowly but surely. The general health is not affected. Alkaline soaps should be frequently employed and salicylic acid ointment applied locally. In some of Mook's² cases the X-ray proved beneficial.

² Mook: Jour. Cutan. Dis., 1912, xxx, 723.

CHAPTER XXII.

PAPULAR OR NODULAR DISEASES OF UNKNOWN ETIOLOGY.

PRURIGO.

Synonym.—*Strophulus prurigineux*.

Definition.—Prurigo is a rare disease of unknown etiology, characterized by widely spread, discrete papules.

Occurrence.—True prurigo is very rare in America, but is fairly common in Austria and Hungary.

Etiology.—The disease usually begins in early childhood, and is more common among the poorer classes of people. The essential cause is unknown.

Symptomatology.—Two varieties are often described, *prurigo mitis* and *prurigo ferox*; both are simply degrees of the same affection, the latter being much more severe. As a rule there is a preliminary stage of urticaria, the lesions frequently being papular, and urticarial wheals may often be seen during the early stages of prurigo proper. The disease itself begins with the formation of discrete, pea-sized papules, of a reddish color, located upon the tibial aspects of the legs. They are accompanied by marked pruritus. As a result of scratching crusts are often seen to surmount the papules. A little later lesions appear upon the arms, and then upon the face and body. The flexor surfaces are less involved than are the extensor. New crops of papules appear from time to time, the older ones lasting several weeks or months and then resolving, but leaving pigment deposits in the skin. The whole skin is apt to become dry and scaly. The lymphatic glands, especially the inguinal and axillary, often become much enlarged. Secondary infections of varying kinds frequently result from the scratching. The disease runs an essentially chronic course, and may last for years, being worse in winter than in summer.

Pathology.—The pathological picture is almost identical with papular eczema. The papule proper starts in the rete as a small vesicle, there is some round-celled infiltration, and the vessels are dilated.

Diagnosis.—Undoubtedly there has been much confusion between prurigo and papular eczema, and also papular urticaria. Eczema, however, usually does not involve so extensive a surface, the papules usually coalesce, and the flexor surfaces are more apt to be involved,

nor is eczema accompanied by glandular enlargement. In papular urticaria the disease is not of such long duration, the skin does not become hard and dry and the glands do not swell.

Prognosis.—It is almost impossible to cure the malady, but it may be alleviated. It is not a lethal affection.

Treatment.—The general hygiene must be improved as much as is possible. Tonic treatment is usually advocated and may help considerably; arsenic has no influence. External treatment consists in baths, followed by oil rubs. Various antipruritic ointments should be used. The X-ray should control the itching.

PRURIGO NODULARIS.

Synonyms.—*Lichen obtusus corneus* (Brocq, C. J. White); *Tuberculosis cutis pruriginosa* (Hübner, Herxheimer); Multiple tumors of the skin accompanied by intense itching (Hardaway, Schamberg and Hirschler); *Acne urticaria*; *Urticaria perstans*.

Definition.—Prurigo nodularis is a disease of unknown etiology, characterized by the formation of papules over the legs and arms, and accompanied by intense itching.

Occurrence.—The disease is very rare.

Etiology.—The cause is unknown. Women between the ages of thirty and fifty are chiefly affected.

Symptomatology.—Discrete, roughly hemispherical, pinkish or brownish nodules or papules, varying in size from one-fourth to one inch, appear upon the legs, occasionally upon the arms and more rarely in other locations. They are usually covered with scales, and as a result of the scratching, due to the pruritus, there may be blood crusts. Rarely the lesions become verrucose. When fully developed they may remain for years.

Pathology.—The following account of the pathology is taken from Sutton's¹ recent communication. The horny layer is increased in thickness, and some of the cells retain their nuclei. Collections of small round cells are found between strands of corneus cells. The granular layer is thinned, but the rete is thickened, and the inter-papillary processes are both longer and thicker than normal. In the prickle layer there may be some slight tendency towards vesiculation. The lymphatics are dilated, the corium is œdematous, and there is considerable infiltration, both around the capillaries and nerve trunks.

Diagnosis.—The condition must be diagnosed from chronic hypertrophic lichen planus. As a rule the color is different, the lesions in

¹ Sutton: Jour. Amer. Med. Assn., 1914, lxiii, 175.

lichen having a distinctly purplish hue. The histological picture is essentially different.

Prognosis.—The prognosis is good so far as life is concerned, but the malady is very difficult to control.

Treatment.—As yet no case has been cured. X-ray may aid for a time. In Sutton's case there was recurrence after excision. Personally I should prefer to first try the X-rays, and then broad excision, possibly combined with cauterization.

URTICARIA PIGMENTOSA.

Synonyms.—Urticaria perstans pigmentosa; Xanthelasmoidea.

Definition.—An inflammatory disease of the skin, of unknown etiology, in which the lesions at first resemble urticaria, but are persistent, and become deeply pigmented.

Occurrence.—The disease is very rare.

Etiology.—The disease usually starts in childhood, and boys are more apt to be affected than are girls. The essential cause is absolutely unknown.

Symptomatology.—At the onset the disease resembles ordinary urticaria, but some of the individual lesions do not disappear, and later become pigmented. At first the stain is of a reddish or brownish color, but later becomes yellowish-brown, so that the lesions may resemble those of xanthelasma. The lesions vary in size from one-fourth to one inch, are well defined, either flat or elevated, and may be soft or firm. The surface of some is distinctly rough. After a time the formation of new wheals ceases, but the pigmented areas persist indefinitely. Wheals can be produced by rubbing with a blunt instrument.

Pathology.—Both the horny and granular layers are normal. The prickle layer is somewhat thickened. Occasionally in the interpapillary processes the prickle cells are elongated and arranged vertically, so as to give a very curious effect. There is a marked increase in pigment in the lower portion of the rete. The corium shows perivascular infiltration chiefly with mast cells. These cells also occur to excess around the glands, ducts and hair follicles, but the upper portion of the corium is packed solidly with them. To demonstrate these cells satisfactorily Unna's polychromemethylene blue stain should be employed. There may also be edema of the upper part of the corium during the wheal formation. Gilchrist² is inclined to believe that the mast cells are present before the wheal formation

² Gilchrist: Bull. Johns Hopkins Hospital, 1896, vii, 140.

occurs, and that they are attracted to special localities during wheal formation.

Diagnosis.—Multiple xanthomata might be confused, but the presence of wheal formation will usually clear up the diagnosis. The lesions of ordinary urticaria are transient, so cannot be confused.

Prognosis.—Unfortunately but little can be done for the condition. It may be possible to aid the urticaria, and to prevent itching, but the already established lesions are refractory to treatment. At puberty the disease is apt to involute, but the pigmented lesions usually remain during life.

Treatment.—The usual remedies for urticaria should be tried, and antipruritic lotions or ointments employed.

CHAPTER XXIII.

BULLOUS AND VESICULAR DISEASES OF UNKNOWN ETIOLOGY.

PEMPHIGUS.

Definition.—Pemphigus is an acute or chronic inflammatory disease of the skin, of unknown etiology, and characterized by the presence of scattered vesicles or bullæ upon the skin.

Occurrence.—True pemphigus is an extremely rare disease. There are many diseases that simulate it, so the diagnosis is made with entirely too great frequency.

Etiology.—As already indicated, there are a number of varieties of so-called pemphigus, namely acute septic pemphigus, pemphigus foliaceus and pemphigus vegetans, that are undoubtedly due to bacterial infection. But as yet the cause of chronic pemphigus has not been established. There are many reasons to believe that the disease is due to an infection of some sort.

Symptomatology.—The characteristic of pemphigus is that blebs of varying sizes arise more or less continuously from apparently normal skin. All portions of the cutaneous surface may be affected, but the lesions are rare upon the mucous membranes. The blebs vary in size, some being very small and some well over an inch in diameter. The walls are thin and the lesions do not tend towards early rupture. As a rule the lesions are well filled with serum, but occasionally they are flaccid, and then there may be great difficulty in distinguishing the condition from pemphigus foliaceus. At first the contents are clear, but later there are many polymorphonuclears present. Occasionally there may be some admixture of blood. The blebs come out singly or in crops, and the skin is never free from them. In some instances there may be considerable itching, but this is unusual. There is a varying amount of constitutional disturbance: in some instances the patient seems fairly well, but more often there is fever, malaise, digestive disturbances, headache, etc. The condition may go on more or less indefinitely or the patient may die, often without any adequate cause being found.

Pathology.—The vesicle formation may occur at varying depths: in some instances the horny layer forms the roof, and in other instances the whole rete forms the roof. Polymorphonuclear leucocytes

can always be seen in the cavity. Both the rete and corium show signs of an inflammatory process, varying in intensity. There is perivascular infiltration, sometimes with round cells and sometimes with polynuclears, or with a mixture of the two types.

Diagnosis.—Pemphigus must be distinguished from a number of conditions, namely: acute septic pemphigus, pemphigus foliaceus, pemphigus vegetans, dermatitis herpetiformis, bullous syphilis of the new-born, dermatitis exfoliativa neonatorum or pemphigus neona-



Fig. 182.—A case of pemphigus, the lesions of which are beginning to simulate pemphigus foliaceus.

torum, bullous impetigo, bullous erythema multiforme, drug or serum rashes, and bullous eruptions due to organic nervous diseases.

It is not often difficult to tell the difference between pemphigus and acute septic pemphigus for the latter has all of the ear-marks of an acute septicæmia. Pemphigus foliaceus may be much more confusing, but as a general rule the lesions of this malady are flaccid from the onset, start at one point and spread out gradually over

the body, and the surrounding skin will readily peel off under pressure or friction (Nikolski's sign). In pemphigus vegetans the lesions usually predominate around the mouth and other orifices of the body, and latter in the flexures, and always show signs of vegetations. Dermatitis herpetiformis usually has smaller lesions, which are apt to be grouped. The itching is very intense, but there are few constitutional symptoms.

Syphilitic pemphigus is always found in young children who are the victims of congenital lues, so that other signs of the disease exist. The lesions usually predominate upon the limbs.

Pemphigus neonatorum is due to an external infection with staphylococci, occurs in young children, often in epidemics in hospitals, and is an acute disease, attended with a rather high mortality.

In bullous impetigo, which is due to a streptococcus infection, some of the characteristic lesions of impetigo can usually be found. The disease usually occurs in children and is distinctly acute, but is readily curable.

Bullous erythema multiforme is simply a variety of erythema multiforme. There is usually the history of previous attacks, and the lesions are bilateral and confined to the limbs in the majority of instances. At times some other types of lesion may be found. The disease is also found in newly arrived immigrants. There is rarely any itching.

In the eruptions due to drugs and sera there is a definite history to help. The lesions may be hemorrhagic. The course of the trouble is acute. In the case of lesions due to nerve lesions the diagnosis is not difficult, for the lesions are sharply confined to portions of the skin supplied by the affected nerves.

Prognosis.—The prognosis is not good. The condition either continues indefinitely or the patient dies, sometimes from exhaustion and sometimes from intercurrent infection.

Treatment.—Patients should be put under the best hygienic surroundings. In some instances immersion in a continuous bath seems to be of great benefit; in other instances, as recommended by Engman and White,¹ they should be kept covered by a bland powder, such as zinc stearate. It is more than possible that the careful opening of each vesicle and the use of antiseptics upon its base might be of aid, but this has never been carefully done so far as I can learn. Internal medication is of doubtful value: arsenic has aided some cases, although it is doubtful if they were examples of true pemphigus. The use of large doses of quinine has lately come into prom-

¹ White: Jour. Cutan. Dis., 1912, xxx, 705.

inence, and some successful results have been reported, but the question is still *sub judice*. The use of autogenous bacterins might be of extreme value. Taken all in all treatment is very unsatisfactory.

DERMATITIS HERPETIFORMIS.

Synonyms.—Dühring's disease; Pemphigus pruriginosus; Dermatitis multiformis.

Definition.—Dermatitis herpetiformis is a rare inflammatory disease of the skin, of unknown etiology, characterized by groups of vesicles that cover a large portion of the body, and that develop in crops for an indefinite length of time.

Occurrence.—The disease constitutes about two-tenths of one per cent of all dermatoses. So far as I can learn it is even rarer among negroes than among whites.

Etiology.—The disease affects persons of any age or sex, but is most common during the period of active adult life. Stelwagon believes that the trouble is neurotic, inasmuch as it frequently manifests itself after severe mental strain. Personally I can see no proof for the neurotic theory and am inclined to believe that the disease is either due to a toxin of some sort and that the disease may be an anaphylactic phenomenon, or that external infection may be responsible, as in pemphigus foliaceus.

Symptomatology.—The type of eruption may vary somewhat; it may be erythematous, papular, bullous, pustular or mixed, but in the great majority of cases is frankly vesicular. Purpuric lesions may occasionally be seen. In some instances one type of eruption will characterize the entire course of the disease, but the variety of cutaneous lesions may vary in the different outbreaks. The disease is characterized by the appearance of a crop of lesions, then by the appearance of a few scattering lesions, and then by another outbreak. The intervals that elapse between the exacerbations are varying: they may be but a few days or several months. The lesions show a marked tendency towards grouping, although the groups are usually very numerous. When the lesions disappear they are apt to leave some pigmentation behind. The eruption is apt to be almost universal, although more severe upon the trunk and upper limbs: the face, hands and feet are usually spared. Itching is usually very intense.

Pathology.—Indicanuria and eosinophilia are almost constant features, however I know from personal observation that the latter may be absent, even during an exacerbation.

The vesicles are fairly deeply seated; in some instances they occur

in the rete, in others just beneath it. Even at an early stage they contain both polynuclears and eosinophiles in addition to serum and fibrin. As a rule the rete is but little changed, but the corium is the seat of an intense inflammatory reaction, the vessels being engorged, and containing many polynuclears and eosinophiles. The upper portion of the corium is œdematous, and filled with the above mentioned types of cells, but there are also present some small mononuclears



Fig. 183.—A typical case of dermatitis herpetiformis at the height of an attack. (Gilchrist's case.)

and fixed tissue cells. Plasma cells are occasionally seen. Gilchrist's² studies upon the histopathology of dermatitis herpetiformis are excellent.

Diagnosis.—Erythema multiforme and pemphigus must always be excluded. Erythema multiforme shows periods of total remission, the eruption is not so extensive or severe, no pigmentation is left by

² Gilchrist: Johns Hopkins Hospital Reports, 1896, I, 365.

the resolved lesions, and there is usually no itching. In pemphigus the lesions are usually larger, do not occur in clusters and do not itch.

Prognosis.—As a rule much relief can be given a patient, but one should never promise a permanent cure, for such a fortunate result is exceptional, but there is a tendency for the disease to become less active as the patient ages. As a rule the disease does not end fatally, although pyæmia has occurred, and in other instances lesions of the kidneys have developed.

Treatment.—Nearly every dermatologist has his favorite treatment for this malady, but the results are usually about the same. In all instances the best of hygiene should be enforced. Arsenic, strychnine and quinine have been lauded by various men—all should be pushed to the limit of tolerance. Autoserum therapy has greatly benefitted several cases that I know of. Whitfield claims good results from calcium lactate used in large doses. I have seen two cases do very well under injections of the staphylococcus albus bacterin. It should always be remembered that the disease is very apt to improve spontaneously, so one must be extremely careful in drawing any deductions as to the value of a remedy.

Externally various antipruritics are to be applied.

POMPHOLYX.

Synonyms.—Dysidrosis; Cheiropompholyx.

Definition.—Pompholyx is a deeply seated vesicular eruption of unknown etiology, and limited to the hands and feet, more especially to the palmar and plantar surfaces.

Occurrence.—This disease constitutes about three-tenths of one per cent of all dermatoses. However it should be remembered that there is still some confusion as to whether certain border-line cases are eczema or pompholyx.

Etiology.—The cause of the disease is unknown; it has no relationship whatever with the sweat apparatus. The disease is not seen in children nor in the aged. It is apt to occur when the individual is below par. Unna considers that the disease is probably an infection, the lowered resistance of the patient enabling it to set up lesions.

Symptomatology.—It is still uncertain whether or not the instances in which there is an outcropping of vesicles upon the sides of the fingers to the exclusion of all other places should be included as examples of vesicular eczema or of pompholyx.

In the typical cases the vesicles occur chiefly upon the palms and soles, and are usually roughly symmetrical. Before the lesions appear there is usually some itching or burning of the affected parts,

and shortly deep-seated vesicles, looking like sago grains, can be distinguished. These lesions work their way up towards the surface, and become larger. As a rule there are from six to twenty lesions upon each hand. The lesions are sharply defined, but may coalesce to form one large bleb. There is no tendency for spontaneous rupture to occur. After the first crop has developed new lesions may appear from time to time, perhaps singly, perhaps in crops. The disease is much more frequent in summer than in winter. Itching is usually very troublesome, except in the case of the lesions upon the lateral aspects of the fingers, which rarely mature.

Pathology.—The pathology of the condition has recently been well reviewed by Sutton,³ whose findings are in harmony with those who



Fig. 184.—Pompholyx. (Collection of Dr. Richard L. Sutton.)

have really investigated the condition before. The vesicle has no connection whatever with the sweat ducts; it begins in the prickle layer, and all of its walls consist of prickle cells. As the vesicles enlarge they become distinctly multilocular, the largest ones being in the center. The corium shows the usual signs of an acute inflammation.

Diagnosis.—It may be very difficult to distinguish an acute eczema, but in the latter the vesicles are usually much smaller and more closely grouped, and there is considerably more involvement of the skin. Ivy poisoning is much more acute.

³ Sutton: Jour. Amer. Med. Assn., 1913, lxi, 240.

Prognosis.—The disease is rather an intractable one; while the immediate attack usually soon disappears, still there is very apt to be another.

Treatment.—The general health must be carefully looked after. Soothing applications, such as calamine lotions, are usually the best. It is possible that one or two full-sized doses of the X-ray might be of great aid.

HYDROA ÆSTIVALE.

Synonyms.—Hydroa vacciniforme; Hydroa puerorum; Recurrent summer eruption.

Definition.—Hydroa æstivalis is an inflammatory disease, that recurs in summer, usually affects males, and which leaves scarring.

Occurrence.—The disease is distinctly rare.

Etiology.—Young males are usually the patients affected. The disease occurs only in summer. The exact cause is not known.

Symptomatology.—The eruption usually occurs upon exposed portions of the body, especially the nose, cheeks, and ears. There may be a few scattered lesions upon other portions of the body. The primary lesion is a vesicle, and usually appears in crops. The vesicle is usually less than a centimeter in diameter, and soon dries up and crusts over. Several small lesions may coalesce. When healing takes place there remains a small pitted scar. As a general rule the subjective symptoms are slight. By many authors hydroa puerorum is considered as an identical affection, but Haase and Hirschler⁴ dispute this and maintain that it is a separate affection, inasmuch as the lesions are just as frequent upon covered parts of the body, and inasmuch as there is no scarring.

Pathology.—The vesicle formation takes place in the rete, and necrosis into the corium usually occurs, hence the scarring.

Diagnosis.—The cardinal points of the disease are that it recurs in summer, that it affects males, that the primary lesions are vesicles that occur upon exposed parts of the body and that leave scars upon healing.

Prognosis.—As manhood is approached the disorder becomes milder, and eventually disappears.

Treatment.—There is no specific treatment. Mild lotions should be used, the calamine lotion being as good as any.

⁴ Haase and Hirschler: Jour. Cutan. Dis., 1908, xxvi, 199.

CHAPTER XXIV.

PELLAGRA.

Synonyms.—Lombardian leprosy; Erythema epidemicum.

Definition.—Pellagra is an endemic constitutional disease of unknown etiology, and characterized by lesions of the skin and of the nervous and digestive systems.

Occurrence.—The disease was first forcibly brought to the attention of American physicians by Searcy's¹ publication in 1907. Since this report the disease has been recognized in nearly every state in the union, and it is probable that there are over 75,000 cases in the United States alone. The majority of the American cases are in the southern states. In addition the disease has long been known in Italy and the adjacent countries, both of Europe, Africa and Asia.

Etiology.—There are two theories as to the causation of pellagra, one that the disease is due to food, and another that it is due to a specific infection.

The food theory was first developed by Lombroso² who held that spoiled maize was responsible. While the maize theory has been pretty generally abandoned, several new theories have recently arisen.

Alessandri and Scala³ have advanced the idea that pellagra may be due to silicic acid, dissolved in a colloidal state. The authors claim to have reproduced in guinea-pigs, rabbits, dogs and monkeys an intoxication that resembles pellagra.

More recently Myers and Voegtlin⁴, of the United States Public Health Service, have suggested that the disease might be due to an excess of soluble aluminium salts in vegetables.

Sambon⁵ first insisted that the disease was due to an infection, and that it was transmitted by the *Simulium reptans*, but later work has shown that the disease exists where this fly is not found. Beall⁶ has conclusively demonstrated this point.

Jennings and King⁷ first suggested that the disease might be carried by the stable fly, the *Stomoxys calcitrans*, and it is now pretty generally believed that if any insect is the carrier, this is the one.

¹ Searcy: Jour. Amer. Med. Assn., 1907, xlix, 37.

² Lombroso: Die Lehre von der Pellagra, Berlin, 1908.

³ Alessandri and Scala: Communication to Reale Accademia Medica di Roma, May 25, 1913; Editorial Jour. Amer. Med. Assn., 1914, lxiii, 868.

⁴ Myers and Voegtlin: Pub. Health Report, June 19, 1914, 1625.

⁵ Sambon: Brit. Med. Jour., 1905, ii, 1272.

⁶ Beall: Trans. Nat. Assn. for the Study of Pellagra, ii, 1912, 177.

⁷ Jennings and King: Trans. Nat. Assn. for the Study of Pellagra, ii, 1912, 51.

Many attempts have been made to transmit the disease to monkeys and to other animals with material derived from human pellagrins. Harris⁸ and Dearman⁹ have reported positive results, but other observers, notably Lavinder, Francis, Grimm and Lorenz¹⁰ have had no such success.

There are several general considerations concerning the epidemiology of pellagra that are of the greatest interest. The first of these is the age and sex distribution of the disease. The following table is taken from the recent publication of Siler, Garrison and MacNeal.¹¹

DISTRIBUTION OF PELLAGRA IN SPARTANBURG COUNTY ACCORDING TO AGE.

Age.	0-4	5-9	10-14	15-19	20-24	25-29	30-34
Females	18	27	15	26	68	89	88
Males	22	34	17	10	11	11	8
Total	40	61	32	36	79	100	96

Age.	35-39	40-44	45-49	50-54	55-59	60-64	65-69
Females	68	44	26	21	17	14	4
Males	14	13	15	15	14	16	8
Total	82	57	41	36	31	30	12

Age.	70-74	75-79	80-84	Total.
Females	0	2	1	528
Males	1	1	2	212
	1	3	3	740

These figures would seem to show conclusively that men, during their years of active work are not so liable to pellagra as are women who remain at home. In other words those who remain at home in the day time are especially liable to be attacked. No food theory can possibly explain these facts and figures.

In America, where the disease is undoubtedly a comparatively new one, the mortality is very much higher than in Italy where it has been rampant for years. In other words pellagra is attacking the inhabitants of the United States with the vigor of a new malady, just as measles claimed its victims by thousands when it first gained

⁸ Harris: Jour. Amer. Med. Assn., 1913, lx, 1948.

⁹ Dearman: South. Med. Jour., 1914, vii, 519.

¹⁰ Lavinder, Francis, Grimm and Lorenz: Jour. Amer. Med. Assn., 1914, lxiii, 1094.

¹¹ Siler, Garrison and MacNeal: Arch. Int. Med., 1915, xv, 98.

a foothold in the Fiji Islands: to my mind this rather speaks in favor of an infectious causation.

The malady may attack a suckling child when the mother has no evidences of the trouble, as in a case that I saw with Sambon on the outskirts of Rome. Sambon has also told me of a number of instances where a visit of only a few days duration to a pellagra center resulted in the individual becoming diseased.

Those doing housework are much more liable to infection than are those who work in the fields or in the mills.

Negroes do not suffer in the same proportion that whites do.

Symptomatology.—There are three sets of symptoms that are associated with pellagra—mental, digestive and cutaneous.



Fig. 185.—Typical case of pellagra. (Strobel's case.)

As a general rule in the spring of the year the afflicted individual first notices some general malaise, an attack of either constipation or diarrhœa, and a slight erythema of the backs of the hands, and possibly of the face. In mild cases these symptoms subside in the course of a few weeks, only to reappear either in the fall or in the following spring. Each succeeding attack is usually more severe. In many instances, however, the patient dies in the first attack.

The cutaneous manifestations are usually not the earliest symptoms, for mild digestive disturbances and some nervous signs usually antedate them. However the first skin lesion is a persistent erythema of the back of the hands, usually stopping short at the line of the sleeve. There may also be an erythema of the skin of the face and neck, and both the elbows and knees may be affected. In mild cases these lesions disappear, leaving only a little pigmentation, and

possibly some slight atrophy. The skin of the knuckles is almost invariably roughened and more deeply pigmented than is normal. In the severe cases, however, there is usually some desquamation, perhaps the whole rete being lifted up in one great blister, as though the hands had been dipped in boiling water. If the skin is not lost it is always much atrophied. In these severe cases, too, the elbows are affected early; the erythema first appears upon the extensor surfaces, but later in the flexors, and eventually one or the other forms a continuous patch with the lesions upon the wrists. The palms of the hands are only exceptionally involved by anything more than a persistent erythema. The knees, and sometimes the dorsal surfaces of the feet, are involved by a similar process, although it is rarely as severe here as upon the upper extremities. Upon the face there may be patches at the corners of the eyes, upon the middle of the fore-

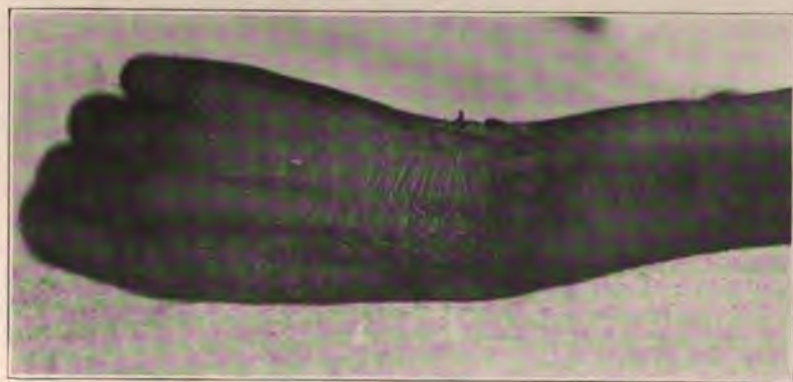


Fig. 186.—Back of hand in a rapidly fatal case of pellagra. There is ulceration upon the flexor surface of wrist.

head and upon the chin. The nose and cheeks are more rarely involved. The lesions here may resemble those upon the hands or the skin may be very dry, slightly erythematous, and a horny sebaceous plug protrudes from each follicular opening: this latter type is the usual form occurring in the negro. The neck, where exposed to the light, is likewise affected.

It is interesting to note that even in children who go almost naked the lesions affect the same areas, so sunlight cannot play any great part in determining the distribution.

The digestive symptoms are varied: there may be either constipation or diarrhœa, although the latter is much the more common, and may be very severe. The tongue is usually inflamed and of a cerese color; the lips and gums usually have the same hue.

The first nervous symptoms often noted are a change in the disposition and some nervousness and irritability. Later the face usually becomes immobile, the so-called "pellagrinous mask." When first seen the reflexes are usually but slightly increased, later they become markedly so, and during the final period of collapse they are abolished. In severe attacks the mentality suffers at an early date, there usually being marked delirium that is apt to terminate in coma and death. In the chronic cases insanity is very apt to result.

Pathology.—The findings at autopsy are not constant: there may be meningitis and some degeneration of both the brain and cord. In addition the viscera may show various types of degeneration. There may be slight secondary anæmia, but the blood findings are not distinctive.

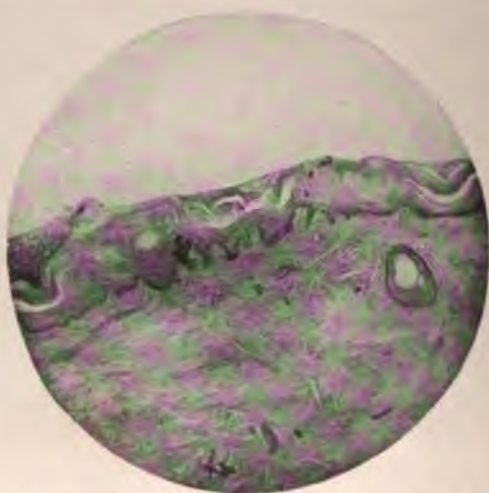


Fig. 187.—Low power photomicrograph of section taken from back of hand in case depicted in Fig. 186.

The cutaneous lesions consist primarily of an excessive thickening of the horny layer, with a thinning of the rete, and fibrous changes in the corium, together with a marked dilatation of the blood vessels, and some slight round-celled infiltration.

Diagnosis.—In a well-marked case the diagnosis is easy, for the distribution is practically characteristic, and when combined with digestive and nervous disturbances gives a typical picture. The pigmentation and deep lining of the skin of the knuckle is often a great aid in diagnosing cases, or in determining whether or not there have been previous attacks, but too much stress must not be put upon this sign, especially in blacks. In the active cases the persistent erythema of the sides of the hands, and possibly of portions of the palm,

is often very helpful. Later the atrophy is characteristic. Alcoholics who suffer from peripheral neuritis may show similar lesions of the hands, and too much exposure to sunlight will often cause a condition of pigmentation that may confuse, but sunlight is very apt to result in keratotic spots, which are absent in pellagra.

Prognosis.—In America the prognosis is not good, for at least one-third of the cases die within two years. The acute typhoidal type usually results fatally within a month or two.

Treatment.—There is no specific treatment. Salvarsan, although lauded by Martin¹² has proven absolutely without value in the hands of other observers,¹³ including myself. In grave cases Cole¹⁴ has had some good results from the direct transfusion of blood, but he tells me that he is not as enthusiastic about it as he formerly was. Hexamethylenamine is of doubtful value. Of late Goldberger has advocated forced feeding, especially of proteids, but apparently it does not always work. The concensus of opinion is that patients should be taken away from a pellagrinous neighborhood if possible, that they should be put in the best possible hygienic surroundings, and that they should eat all that they can, especially of fresh proteins. Symptomatic treatment should be given as occasion demands. In the severe cases either transfusion of blood or intravenous injections of salt solution should be given.

While pellagra is admittedly not a contagious disease still it seems to me that inasmuch as the disease may possibly be borne by an insect carrier that we should at least screen all of our patients.

Pellagra in the Negro.—Pellagra runs just the same course in the colored that it does in the white. However the disease is not quite so frequent. In the black the lesions upon the face are usually of the dry type, that is, there are dry sebaceous plugs in the follicle mouths, so that the skin feels like a nutmeg grater.

¹² Martin: Trans. Nat. Assn. for the Study of Pellagra, 1912, ii, 369.

¹³ Cranston: Trans. Nat. Assn. for the Study of Pellagra, 1912, ii, 377.

¹⁴ Cole: Trans. Nat. Assn. for the Study of Pellagra, 1912, ii, 365.

CHAPTER XXV. ATROPHIES AND DEGENERATIONS.

SENILE ATROPHY.

Synonyms.—*Atrophia senilis*; Old age of the skin.

Definition.—Senile atrophy is the condition associated with advanced years, and is characterized by dryness and some actual thinning.

Etiology.—The condition is due to a disturbed blood supply and to a failure of the sebaceous glands to properly secrete.

Symptomatology.—The skin of the exposed portions is first affected. Those who have had much exposure to the weather, especially to bright sunlight, suffer at an earlier date and also to a greater degree than those individuals who have led a sedentary and indoor existence. It is first noted that the skin is dry, and that there may be some branny desquamation. The skin is wrinkled and at times actually thinned. Seborrhoeic keratoses often develop, especially in those who have a rather sallow-complexion. Slight grayish atrophic spots may be seen at times.

Pathology.—The epidermis is thinned and the usual wavy dermo-epidermal line is almost straight, the papillae being practically obliterated. Both the hair follicles and the sebaceous glands usually show some degeneration, but the sweat glands are unchanged.

Treatment.—Long continued exposure to bright sunlight should be prohibited. Various soothing ointments should be rubbed into the skin.

ATROPHIC LINES AND SPOTS.

Synonym.—*Striae et maculae atrophicae*.

Definition.—Atrophic lines and spots may be due to idiopathic changes in the skin or to stretching, and are characterized by slightly depressed whitish areas, sometimes linear, and sometimes irregular in shape.

Symptomatology.—The atrophic lines are regularly found upon the abdomen of women after pregnancy, or in any individual in whom there has been a rather rapid increase in size. In other instances the lesions may develop without any apparent cause. In the case of the lines there are usually a number that run a more or less parallel course, although they are usually rather irregular in shape. They

are white and glistening, usually not over a sixteenth of an inch in width, and may be slightly depressed. Where there are spots only, these are usually gathered in groups. The hairs situated upon these spots are distinctly atrophic. There are no subjective symptoms.

Pathology.—The epidermis is thinned and flattened out, the blood vessels decreased in number, the glands either missing or atrophied, the elastin absent, and the collagen slightly degenerated.

Diagnosis.—Morphœa must be distinguished, but in this condition the lesions are usually more regular in shape and much larger in size.

Prognosis.—The condition exists indefinitely, nothing will improve it.

DIFFUSE IDIOPATHIC ATROPHY.

Synonym.—Aerodermatitis chronica atrophicans.

Definition.—This condition is a diffuse atrophy of the skin, the cause of which is unknown.

Etiology.—The cause is unknown; in some instances syphilis has given a clinical picture that is indistinguishable. Finger and Oppenheim¹ offer three hypotheses:

1. An internal agent acting upon a predisposed skin.
2. An external causative factor acting upon a predisposed skin.
3. An external factor alone of marked intensity, as the X-ray.

Finger has made one very interesting observation, namely that if serum from a patient with dermatitis atrophicans be injected into the healthy skin, atrophy will often develop at the site of the injection.

Symptomatology.—Irvine² gives a summary of the views of Finger and Oppenheim, who have proposed the following classification:

1. Dermatitis atrophicans diffusa or universalis, which applies to those instances where a large area is involved.
2. Dermatitis atrophicans maculosa, where only small circumscribed areas are affected.

The chief clinical features are atrophic thinning, some branny desquamation, diminution of sweat, loss of hair, dilated peripheral veins, and at times some scleroderma-like patches.

Pathology.—The most constant finding is loss of elastin. In addition the rete is thin, and the wavy dermo-epidermal line straight.

¹ Finger and Oppenheim: Die Hautatrophien, 1910.

² Irvine: Jour. Amer. Med. Assn., 1913, lxi, 396.

The appendages are markedly atrophied, and the vessels decreased in number but some of them distended.

Diagnosis.—In certain instances the diagnosis from erythromelia, a form of erythromelalgia, may be very difficult; however in this latter affection the affected skin is wrinkled and parchment-like, of a livid color with telangiectases, and the involved areas are symmetrical. Sutton³ thinks that no hard and fast line can be drawn between this affection and scleroderma or morphea.

Prognosis.—There is very little chance for permanent recovery unless the case has a syphilitic etiology.

Treatment.—Syphilis should always be definitely excluded. Other treatment consists entirely of emollient salves.

SCLERODERMA.

Synonyms.—Hide-bound skin; Sclerema; Dermatosclerosis.

Definition.—Scleroderma is a chronic disease of unknown etiology, characterized by a localized, rigid induration, not inflammatory in character.

Occurrence.—The disease is a distinctly rare one.

Etiology.—The etiology is absolutely unknown: many theories have been advanced, but absolutely no proofs.

Symptomatology.—There are a number of different varieties, differing chiefly in the extent of surface covered. The limbs are probably more frequently attacked than are any other parts, but no portion of the skin is exempt. The diffuse type may begin either acutely or insidiously. In the former there is usually first noticed some œdema, sometimes with marked constitutional symptoms, sometimes without them. As a rule the œdema pits but slightly on pressure. This condition spreads rapidly until a large surface of the body is involved, and as the œdema disappears the skin becomes hard and rigid. In the chronic type there is no preliminary œdema, but the atrophy develops not the less surely; however not so wide an area is involved as a general rule. The first symptom noticed is a stiffness, and the patients often think that they have rheumatism. But as a rule there are no other subjective disturbances, although there may be a few neuralgic pains. In either type of the disease examination reveals a general thickening of the skin, and it is bound down to the underlying tissues so that it cannot be moved over them. The edges are not well defined. In some instances there may be either an increase or a decrease in pigmentation. In the band-like type there is

³ Sutton and Kanoky: Jour. Cutan. Dis., 1909, xxvii, 556.

a long line, rarely more than an inch in width, which may be a foot or more in length and which is most common upon the limbs. When the face is involved there is an absolute lack of expression, owing to the lack of play of the underlying muscles. As a result of the lack of use the muscles also atrophy. When the condition occurs around a joint, movement is markedly limited.

Special Varieties.—Morphœa is simply a localized form of scleroderma. In this variety there are a number of localized, sharply circumscribed white or whitish patches, which are rarely more than an inch in diameter. In this form there may be some dilatation of the superficial capillaries, so as to give a pinkish color, or so as to give a network of fine vessels. The so-called white spot disease, recently carefully studied by MacKee and Wise⁴ is simply a special form of morphœa, in which the lesions are not more than a fourth of an inch in diameter and occur in groups.

Pathology.—The rete is usually thinned, and the wavy dermo-epidermal line obliterated. There is a marked increase in the connective tissue, which is much firmer than normal in the corium, and which also takes the place of the subcutaneous fat. Both the elastin and collagen are increased, and the fibers are closely packed together. In late cases the appendages are destroyed.

Prognosis.—The outlook is almost uniformly unfavorable; in the mild cases life is not endangered, but there is very little chance of the skin becoming normal. In the advanced stages of scleroderma the patient is often unable to move to any extent.

Treatment.—There is no specific treatment. The general health must be looked after. Pilocarpin and thyroid extract have been recommended internally. Locally one may try massage with various oils, various forms of electrical treatments and the X-ray. Various irritating remedies such as alcoholic solutions of resorcin are recommended for morphœa, but I must confess that I have never seen any improvement take place.

KRAUROSIS VULVÆ.

Kraurosis vulvæ is a rare condition in which the genitalia of women become the seat of atrophic changes, often of such an intense degree as to obliterate many of the folds, especially of the vestibule and the labia minora. There is often an accompanying pruritus. It has been suggested that lack of ovarian secretions may be the cause, and treatment should be based upon this assumption, inas-

⁴ MacKee and Wise: Jour. Cutan. Dis., 1914, xxxii, 629.

much as no local remedies have any effect. Carcinomatous degeneration has been known to occur.

AINHUM.

Ainhum is a disease characterized by the formation of a strangulating circular band around either one or more of the fingers or toes, most often of the little toe. This fibrous band gradually constricts more and more until spontaneous amputation occurs. It is seen much more frequently in the negro than in the white. As a rule there are no subjective symptoms. The cause is unknown, but is usually considered to be a trophoneurosis. It is stated that if the disorder is seen early free incision of the constricting band in several places will result in the arrest of the process. In advanced cases amputation should be performed.

XANTHELASMA.

Synonyms.—Eyelid xanthoma; Xanthoma planum palpebrarum

Definition.—Xanthelasma is a fatty degeneration of the superficial muscles, and is characterized by the formation of superficial yellowish patches upon the eyelids and in their neighborhood. The condition bears no relationship whatever to xanthoma.

Occurrence.—The condition is far from rare, although curiously enough physicians are not often consulted concerning it. Probably one out of every hundred adult women has it to a greater or less extent. Curiously enough I have never seen a case of it in a negro.

Etiology.—The cause of the degeneration is unknown. There seems to be no special factor, except that the disorder is far more common in women than in men, and that it usually develops in those past middle life.

Symptomatology.—The lesions of xanthelasma occur upon the skin of the eyelids, occasionally upon the neighboring integument, and much more rarely upon the skin of the face. At first they are discrete and not more than a quarter of an inch in length, and perhaps half that in breadth. In number there may be one or two or there may be fifty. In the latter cases some of the patches coalesce, although they usually remain discrete. The first patch is near the inner canthus of the eye, and the next upon the upper lid. The color is very similar to that of chamois, but may at times be a bit yellower. The surface skin appears normal except for the discoloration. There are no subjective symptoms, and the course is essentially a chronic one.

Pathology.—Pollitzer⁵ has shown very clearly that the condition is one in which there is a fatty degeneration of the superficial fibers of the orbicularis muscle. The epidermis, cutis, hair follicles and glands are normal, but the greater portion of the cutis is packed with cell-like masses known as "xanthoma cells." These cells are fragmented and degenerated remains of muscle fibers with proliferated sarcolemma nuclei. Hence the "xanthoma cell" is not a cell at all.

Diagnosis.—When one considers the color of the lesions, their situation, and the normal character of the superficial skin an error in diagnosis is practically impossible.

Prognosis.—If left alone the lesions last indefinitely, they do not disappear spontaneously.

Treatment.—Probably the most satisfactory way to remove them is by electrolysis, using the negative pole of a galvanic battery. The needle must be separately inserted along each edge of the lesion, and then once or twice through its center. As strong a current should be employed as the patient can comfortably stand. The needle should be left in position about one minute. In the course of a few days the lesions will dry up and fall off, and practically no scar remains. McGuire⁶ has recommended the application of monochloroacetic acid, a drop being placed in the center of each patch. Usually, however, electrolysis is to be preferred.

COLLOID DEGENERATION.

Synonyms.—Colloid milium; Hyaloma.

Definition.—Colloid degeneration is a chronic affection of the skin due to colloid degeneration of the connective tissue, and characterized by the formation of yellowish nodules.

Occurrence.—The disorder is exceedingly rare.

Etiology.—The cause is unknown.

Symptomatology.—Hartzell⁷ states that there are three groups of cases:

1. Numerous small lesions characterize this group. They are firm, yellow, translucent nodules that almost resemble vesicles, situated upon the face, and containing a transparent jelly-like substance. The mucous membranes may be affected.

2. The second group of cases is not so well defined. There are usually but one or two lesions, and it is possible that they represent

⁵ Pollitzer: Jour. Cutan. Dis., 1910, xxviii, 633.

⁶ McGuire: Jour. Cutan. Dis., 1898, xvi, 328.

⁷ Hartzell: Jour. Cutan. Dis., 1914, xxxii, 683.

lesions of other diseases which have undergone collagenous degeneration.

3. The third group comprises the doubtful cases.

Pathology.—Hartzell reports the following changes: a marked thinning of the epidermis with disappearance of a portion of the basal-celled layer and colloid degeneration of some of the prickle cells; complete replacement of the upper portion of the corium by

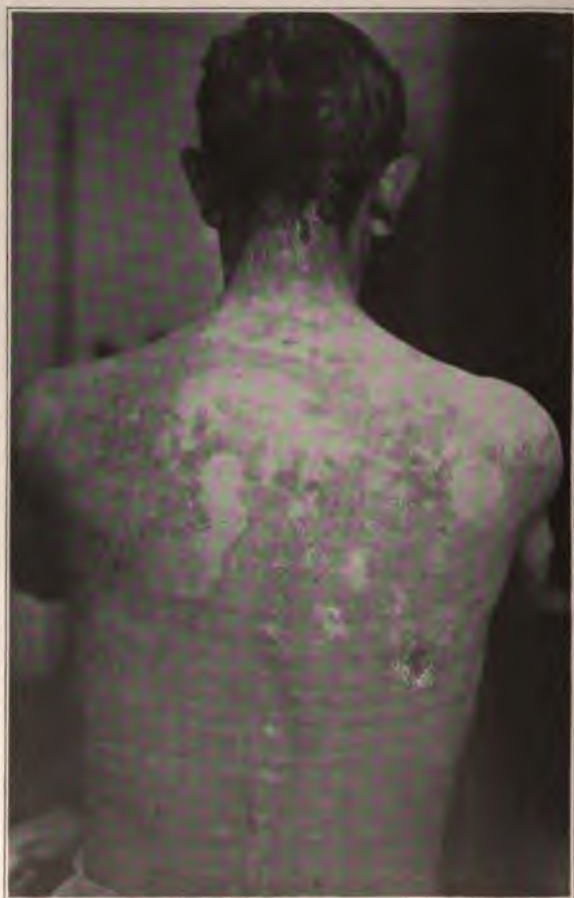


Fig. 188.—Hyaline degeneration of the skin. This illustration is placed in the book to call attention to a disease that has never been described. (Gilchrist's case.)

colloid material; degeneration and destruction of the elastic tissue.

Diagnosis.—The peculiar color and consistency of the growths, and the fact that a gelatinous material can be squeezed from them suffices to make the diagnosis clear.

Treatment.—The lesions should be opened, and the colloid material evacuated. If healing does not then take place cauterization should be tried.

HYALINE DEGENERATION.

While it is well known that hyaline degeneration of the skin may follow such diseases as leprosy and syphilis, yet a diffuse idiopathic hyaline degeneration of the skin has never been described. However such cases do occur, for about two years ago I saw such a case with Gilchrist. The patient was a man aged about thirty, who had suffered with his present eruption since he was one year old. There were large yellowish plaques upon his body, and in the axillary and inguinal regions they had become verrucose. Upon his hands were spiny or warty growths, and upon his legs were the scars of old vesicles. Histological examination showed the presence of a hyaline degeneration, especially in the papillæ, around the blood vessels and sweat glands and ducts. The Wassermann was negative.

CHAPTER XXVI.

BENIGN EPITHELIAL NEW GROWTHS—THE KERATOMATA. KERATOSIS OF THE PALMS AND SOLES.

Synonyms.—Keratosis palmaris et plantaris; Keratoma; Tylosis of palms and soles.

Definition.—This variety of keratosis of the palms and soles is a thickening of the horny layer, which may be circumscribed or diffuse.

Occurrence.—The disease is unusual, forming less than one-tenth of one per cent of the cases seen in dermatological practice.

Etiology.—The disease is both congenital and hereditary in the majority of instances. Exceptionally it has been acquired. A history of a number of generations being affected is occasionally obtained. Either this affection or an analogous one is endemic on the island of Meleda, off the coast of Dalmatia.

Symptomatology.—Besnier divides the cases into four groups: (1) The ordinary symmetric congenital form; (2) The symmetrical form developing in childhood, and at times inflammatory; (3) Symmetrical keratoma, usually of the feet, developing in isolated spots; (4) Accidental keratoma, developing at any age, and at times as the result of the occupation, and yet distinct from callosities.

(1) In typical instances of the most common congenital type there is a diffused keratoid condition of the whole palm and sole, the lesions being distinctly horny. The color varies from grey to a brownish-black, and the whole lesion may be flat, or there may be individual verrucosities. There is usually a red halo surrounding the edges of the patch. The condition is essentially a chronic one, although the horny layer may be cast off from time to time.

(2 and 3). These two forms need no discussion, being probably modifications of the other two.

(4). A keratoderma of one hand or of one sole may develop, and may or may not be associated with the occupation of the individual. The cases due to the ingestion of arsenic must be separated. In these spontaneous cases the lesions are usually not so widely spread as in the true congenital type. It is possible that a few of them are due to syphilis, but in some instances this is certainly not true.

In none of the cases are there any subjective symptoms, although there may be very slight tenderness at times.

Pathology.—The disease is histologically almost identical with ordinary callosities, there being a great thickening of the horny layer, some pressure atrophy of the rete, and flattening of the papillae.

Diagnosis.—In the congenital cases there can be no error in diagnosis. It may be resembled by a squamous eezema, but in the latter condition there is a history of a later development associated with itching. In the acquired cases it is necessary to rule out both arsenic and syphilis as the cause.



Fig. 189.—Acquired palmar keratosis of unknown cause.

Prognosis.—The disease cannot be cured, but it can be relieved. It is more than possible that cancer might develop upon this basis.

Treatment.—The parts should be covered with the following:

R	Acidi salicylici	3 i	4.
	Collodion flexil.	5 i	30.

As soon as the collodion peels off the feet should be soaked in hot water, and then scraped gently, and the same prescription reapplied. This method of treatment will give much relief.

X-ray exposures are reported to benefit some cases.

SIMPLE KERATOSIS.

In some few cases a solitary keratosis may develop upon any portion of the body, usually upon the face or hands of the old. These lesions resemble those of the advanced stage of senile keratoses, but do not originate in the same way. Owing to the very real danger of cancer developing from them they should be completely removed as advised under senile keratoses.

SENILE KERATOSIS.

Synonyms.—Keratosis senilis; Senile wart; Seborrheic wart; Verruca plana.



Fig. 190.—Senile keratoses of face, one of which has become cancerous. (Collection of Dr. Richard L. Sutton.)

Definition.—A senile keratosis is a thickening of the horny layer of the skin which develops upon a flat pigmented patch, so common in those past middle age.

Occurrence.—These growths are excessively common among old people, especially those who have led an out-of-doors existence. At least one out of every ten individuals is thus affected.

Etiology.—There can be no doubt but that exposure to strong

sunlight, the elements, X-rays, strong alkaline solutions, or any thing that tends to dry or age the skin favors the development of these lesions. They are especially common in individuals who have sandy hair and a rather sallow complexion. The disorder is one of the changes associated with old age of the skin. Strangely enough negroes, even mulattoes, very rarely suffer from these growths.

Symptomatology.—Sutton¹ divides these lesions into three classes: first and most frequent, a keratoid variety; second, a nævoid type; third, a verrucose form. All start in the same way. The first abnormality noted is an oval yellowish patch, usually about one-third of an inch in length, with fairly well-defined edges and containing a



Fig. 191.—Senile keratosis of lip. These lesions are very prone to become confluent. (Collection of Dr. Richard L. Sutton.)

few punctate black spots. The skin may appear a trifle thickened. This lesion gradually becomes a trifle darker and possibly larger, and the punctæ show more plainly; then a very thin scale may develop. Eventually the color becomes almost black, and the scale becomes thicker. A number of these patches may coalesce with the result that one very large lesion is formed, a lesion that may exceptionally be several inches in diameter. The depth of the crust varies greatly in different cases, it may be very thin, or very thick and horny. In some instances the growth is soft and friable, the nævoid type of Unna. These lesions are most common upon the face, the

¹ Sutton: Jour. Amer. Med. Assn., 1915, lxiv, 403.

backs of the hands, and between the shoulder blades: It cannot be too strongly emphasized that all of the different types are very prone to end in cancer if left undisturbed.

Pathology.—Sutton seems to have definitely established the somewhat vexed question as to the pathology of these growths. He has clearly shown that in the keratoid variety there is great corneus hypertrophy, some parakeratosis, slight acanthosis, proliferation of the basal layer, a flattening of the papillæ, dilatation of the vessels of the corium and an infiltration of the upper portion of the corium



Fig. 192.—Pathology of verrucose variety of senile keratosis. (Collection of Dr. Richard L. Sutton.)

with small round and fixed tissue cells. Cysts of the sweat ducts are not uncommon.

In the navoid type there is but a slight parakeratosis, marked pigmentation of the rete, and some proliferation of the basal layer. The most marked changes are in the corium, where there is a very marked cellular proliferation that almost resembles a nevus.

The verrucose form shows considerable hyperkeratosis, pronounced acanthosis, exceedingly active proliferative changes in the basal layer, and a great papillary hypertrophy. The changes in the corium compare to those in the keratoid type.

Diagnosis.—The diagnosis is uniformly easy; only pigmented moles might be mistaken, and they never show a thickening of the horny layer, hence no scaliness.

Prognosis.—Beyond a slight amount of disfigurement these growths are not harmful until they degenerate into carcinomata, sometimes of a very malignant form. It is probable that at least one out of every ten of these little abnormalities would eventually become cancerous if left undisturbed for any length of time.

Treatment.—In some instances the early lesions can be removed by the frequent application of a bland grease, but they are always apt to recur. When once the horny scales begin to gather they can be removed by means of the following ointment:

R	Acidi salicylici	3 i	4.
	Ung. aq. ros., q.s.	3 i	30.

However such an ointment only removes the crusts and does not cure the disease. In the early stages possibly the best treatment is twenty seconds freezing with carbon dioxide snow. However in growths that have existed for some time and where there is any ulceration, or where there is a very heavy crust, it is best to excise with a knife under a local anæsthetic, and then examine the specimen histologically for carcinoma. If such a degeneration be found the treatment is that of cancer.

CUTANEOUS HORN.

Synonyms.—Cornu cutaneum; Horny excrescence; Horny tumor.

Definition.—A cutaneous horn is due to a great proliferation of the horny cells, thus forming a marked localized outgrowth.

Occurrence.—The disease is rare, forming but two cases in each thousand.

Etiology.—We are ignorant of the exciting causes, but probably they are similar to those of senile keratoses. Although they usually occur in those past the meridian of life they may also develop in the young.

Symptomatology.—Cutaneous horns usually develop upon the face or scalp, although they may arise upon any portion of the cutaneous covering; several cases where they have arisen from the penis have been reported. They are usually solitary, but may be multiple. At first they grow but slowly, and may be mistaken for ordinary or senile warts, but the overgrowth of horny tissue continues, and they may grow to a considerable length, even as much as six or seven inches, although even longer ones have been reported. As a rule the growth is not straight, but curls more or less near the tip. At the

apex the diameter is much less than at the base, where it varies from $\frac{1}{4}$ to two or three inches. The horns are either angular or irregularly roundish; they are usually laminated and irregular. In color they may be gray, brown, yellow or black. They give rise to no subjective symptoms unless struck, when there is pain at the point of attachment. They may drop off or be knocked off, but invariably grow again. They are very apt to become malignant, cancer frequently developing at the base.

Pathology.—Horns arise from the deeper portions of the rete, the papillæ being elongated so as to enter their bases. The horn substance consists of cells of the horny layer, forming columns or rods.



Fig. 193.—Cutaneous horn.

Diagnosis.—The diagnosis is easy once the horn is established, but in the earliest stages they are difficult to tell from keratoses.

Prognosis.—A considerable proportion of these growths eventually become malignant.

Treatment.—The horn may be broken off at the root, and the base deeply cauterized with the actual cautery or with the acid nitrate of mercury, but the most certain plan is undoubtedly excision, with a fair margin of healthy tissue.

POROKERATOSIS.

Synonyms.—Hyperkeratosis eccentrica; Keratoderma eccentrica.

Definition.—Porokeratosis is a chronic disease of the skin, of un-

known etiology, and characterized by one or more patches which have elevated horny borders and slightly depressed centers.

Occurrence.—The disorder is very rare.

Etiology.—That the disease is hereditary has been shown by Gilchrist² in his report of eleven cases in four generations of one family. It is much more common in Italy than in America. The exact cause is unknown.

Symptomatology.—The disease usually develops upon the back of the hand, but may develop upon other portions of the body, especially the feet, beginning as a small lesion that resembles a keratosis or perhaps a flattened wart. After a considerable space of time the lesion or lesions begin to extend peripherally, forming round or roundish areas that may be as much as two inches in diameter, that are sharply circumscribed by a raised, dark, horny edge and having a more or less atrophic center. The lining wall is very irregular in outline, and throughout its center there is often a depression that may contain concretions. The enclosed portion of the skin usually shows some thickening and possibly some atrophic areas, and the hairs may or may not disappear. As a rule there are no subjective symptoms.

Pathology.—The horny layer is much hypertrophied, and the follicles are filled with plugs. The sweat ducts are also often plugged.

Diagnosis.—Once the disease is established it cannot be mistaken for any other malady.

Prognosis.—There is very little tendency for spontaneous recovery to take place, but apart from the disfigurement caused there seems to be no danger, although it is possible that cancer might elect to grow upon such a keratotic soil.

Treatment.—Gilchrist found curettage and cauterization was not effectual, inasmuch as the lesions promptly returned. He had good results with excision, but preferred to use the electric needle which left very little scarring.

ANGIOKERATOMA.

Synonyms.—Angiokeratoma of Mibelli; Keratoangioma.

Definition.—Angiokeratoma is a chronic affection, of unknown etiology, and characterized at first by telangiectases and later by the development of keratoses.

Occurrence.—The disease is exceedingly rare, possibly because it is not looked for more often.

² Gilchrist: Jour. Cutan. Dis., 1899, xvii, 149.

Etiology.—The disease may be due to circulatory weakness or to chilblains, but as yet this is not definitely established.

Symptomatology.—The dorsal surfaces of the fingers and toes are probably most often involved, although the dorsal surfaces of both the hand and feet are fairly often affected. The ears, forearms, legs and scrotum have been involved in exceptional instances. The affection commences with minute telangiectases, that are usually closely crowded together. Later these venous dilatations are covered by wart-like growths or keratoses. While the lesions are usually more or less regularly scattered and remain discrete, nevertheless coalescence may occur. The lesions are small, only a fraction of an inch in diameter.

Pathology.—Sutton³ has recently reviewed the literature in addition to reporting two cases of his own. The trouble starts with vascular dilatation, possibly due to a lack of elastic tissue. The inter-papillary processes become elongated and there may be some infiltration with small round and fixed tissue cells. There is a varying amount of hyperkeratosis.

Diagnosis.—The presence of the vascular dilatation at the base of wart-like growths should make diagnosis easy, especially as the lesions are multiple.

Prognosis.—The malady is persistent, not tending to undergo spontaneous involution. It is possible that cancerous changes might take place in them.

Treatment.—Excision, electrolysis, or cauterization will serve to cure the condition.

XERODERMA PIGMENTOSUM.

Synonyms.—Angioma pigmentosum atrophicum; Dermatosi Kaposi; Atrophoderma pigmentosum; Lentigo maligna.

Definition.—Xeroderma pigmentosum is a disease due to a congenital hypersusceptibility to light rays, and characterized at first by freckle-like spots, that later become keratotic and then cancerous.

Occurrence.—The disease is distinctly rare, there being about one hundred cases upon record.

Etiology.—The individuals who later suffer from this affection are undoubtedly the victims of a congenital weakness of the skin, whereby the changes that are usually only brought on by prolonged exposure to intense light, here develop after comparatively mild and short exposures. It seems definitely established that the first symptom of this disease appear after such exposure.

³Sutton, Jour. Amer. Med. Assoc. 1911, vii, 189.

Symptomatology.—At birth the child seems normal, but usually by the end of the third or fourth year it is noted that there are numerous freckles upon the parts exposed to light. In the course of years these freckles increase in number and impigmentation, and eventually others appear upon portions of the body not directly exposed to the light. There is always photophobia. Later telangiectases and patches of atrophy develop in the skin, and still later some of the freckles become keratotic, and eventually terminate in carcinomata, usually of the basal-celled type. In some exceptional instances the lesions of cancer do not develop for many years, but they usually arise before the twentieth year.

Pathology.—The pathology of the condition is essentially that of the keratoses. The neoplasms are usually of the basal-celled variety.



Fig. 194.—Xeroderma pigmentosum. (Case in Johns Hopkins Hospital.)

Diagnosis.—No mistake can be made in the diagnosis.

Prognosis.—The prognosis is bad, although a few cases do live for many years before cancer develops. Usually, however, malignant lesions are very numerous.

Treatment.—The child afflicted with this trouble should be kept from exposure to direct sunlight at all times, and should not be exposed to strong daylight any more than is necessary. It would be better to cover the exposed parts with a red lotion when such exposure is necessary. As fast as the neoplasms develop they should be excised. The X-ray should not be used, inasmuch as it might easily aggravate a condition already caused by an excess of actinic rays that are badly borne.

LINEAR NÆVUS.

Synonyms.—*Ichthyosis hystrix linearis*; *Nævus unius lateralis*; *Nævus nervosus*; *Papilloma lineare*.

This rather uncommon affection is at present in a much confused state, inasmuch as no two writers agree upon either the pathology or the classification. Some consider that it is a true nævus and others that it is almost entirely a keratotic affair. In most cases there is an



Fig. 195.—Linear nævus. (Gilchrist's case.)

increase in the horny layer so that a clinical keratoma is formed. The distribution is usually unilateral, and sometimes in the form of a straight line and sometimes in the form of various scrolls or ser-piginous figures. While the condition can be somewhat improved by the use of salicylic acid ointments still surgery is the only means of affecting a cure. In the cases of small distribution carbon dioxide snow might be used, if pathological examination showed that the lesions were superficial.

CHAPTER XXVII.

BENIGN EPITHELIAL NEW GROWTHS, EXCLUSIVE OF KERATOMATA.

A number of epithelial new growths, such as warts and molluscum contagiosum, are clearly due to some variety of microorganism, hence are placed in a separate chapter.

BENIGN FIBRO-EPITHELIOMA.

Synonyms.—Congenital wart; Hard or mixed nævus (Unna); Non-pigmented mole; Papilloma.

Definition.—These growths are congenital, non-pigmented, sessile or pedunculated overgrowths of epithelium, often with papillary hypertrophy.

Occurrence.—These growths are very common, although the dermatologist is not often consulted for them, inasmuch as they cause the bearers no trouble beyond some slight deformity.

Etiology.—In almost all instances these growths are congenital.

Symptomatology.—There are a number of different varieties of these little growths. Perhaps the commonest is the semiglobular growth that is so often seen upon the face, and from which a bunch of hair may protrude. These growths vary in size from one-sixteenth to a half inch in diameter, and are clearly attached to the skin and not to any deeper structures. They give rise to no symptoms. Occasionally they become the site of epitheliomata, usually of the basal-celled type.

Another type is the elongated, pedunculated growth, that resembles a filiform wart.

The last common type is the large pedunculated growth, which is attached to the skin by a slender pedicle; the body of the growth is thrown into convolutions, somewhat like brain substance.

Pathology.—All of these growths show an enormous hypertrophy of the prickle-celled layer, the rete being much thickened and the interpapillary processes much elongated. The papillary hypertrophy is secondary, hence these growths cannot properly be called papillomata, as is usually done.

Diagnosis.—The long continued presence, the lack of inflammatory signs, and the solid character of these little tumors renders diagnosis uniformly easy.

Prognosis.—The prognosis is almost uniformly good, for malignant degeneration is rare. Nevertheless if they are subject to chronic



Fig. 196.—Fibro-epithelioma of skin of upper lip. A similar lesion upon the nose has become cancerous.



Fig. 197.—Fibro-epithelial tumor of mucous membrane of lower lip.

irritation they should be removed as a prophylactic measure. There is absolutely no danger in properly removing such a growth, and the

scar thus produced is very slight, and much more slightly than the original malformation.

Treatment.—These growths may be removed in three ways: first by the knife, and then bringing the edges of the wound together to form a linear scar; second by means of the electric needle; third by means of carbon dioxide snow. In my judgment the last method is not so good as the others, for it is more painful, and the results are not so certain. A man who is skilful with the knife will leave practically no scar whatever.

PIGMENTED NÆVUS.

Synonyms.—Soft nævus (Unna); Pigmented mole; Mole; Birth-mark; Mother's mark.

Definition.—A pigmented nævus is a congenital overgrowth of nævoid cells that are probably derived from snared off bits of epithelium.

Occurrence.—Almost every individual has a number of these nævi upon his skin; some have dozens of them.

Etiology.—It is still unsettled whether these growths spring from the epithelium or from the endothelial lining of the lymphatics.¹ Unna² and Krompecher³ maintain that they have the former origin, the majority of text books, following von Recklinghausen, maintain the latter. Unna gives a number of reasons for believing that they are of epithelial origin and not of lymphatic origin:

1. The cells never show any regular concentric arrangement.
2. The cell cords never show any regular, well-margined lumen.
3. At the periphery the cell cords are vertical, while the lymph vessels have a horizontal course.
4. The cords in large vessels lie in parallel bundles, and the bundles cross each other at all possible angles. Consequently the cords run in an almost opposite direction to the lymph vessels of the skin.
5. At the base of the tumor the columnar character is very frequently absent, while, were the growth from the lymph vessels, the columnar distribution would be better marked towards the hypoderm.
6. Did the cellular columns develop in the lymph vessels, they

¹ Johnson: Jour. Cutan. Dis., Jan. and Feb., 1905.

Gilchrist: Trans. Amer. Dermat. Assn., 1898, 30.

Whitfield: Brit. Jour. Dermat., 1900, xii, 268.

Fox: Brit. Jour. Dermat., 1906, xviii, 1, 47, 83.

² Unna: Histopathology of Diseases of the Skin.

³ Krompecher: Der Basalzellenkrebs.

would, at the periphery, be recognizable as such, would spread out radically, and would give the tumor a blurred appearance, while the very contrary is the case.

7. The cellular cords in different nævi vary very much in thickness.

8. The lymph vessels are demonstrably free, and in many loosely-formed nævi run through as dilated spaces.

9. There is no comparison with lymphangiomata of the cutis and subcutis.

10. The cellular columns of nævi by no means correspond to the appearance produced by the injection of the normal lymph vessels of the skin.

Symptomatology.—There are a number of differing clinical forms of these growths: the common pigmented mole, the yellowish small mole, the yellowish soft growth of varying sizes, sometimes so large as to cover much of the bodily surface, the verrucose mole, the fatty mole, the hairy mole, and the blue nævus.

The *ordinary pigmented moles* are nearly always congenital, but may be acquired, even comparatively late in life. They are either flat or elevated, are usually soft in consistency, and vary in diameter from an almost microscopic size to half an inch or more. They may be hairless, or there may be a tuft of coarse black hairs protruding from the center. As a general rule moles remain stationary in size, but occasionally, as the result of irritation, they will spread peripherally.

The *yellowish moles* or nævi, whether they be large or small, and whether their surface be harsh or downy, are closely related to the deeply pigmented moles. These moles may be situated upon any portion of the body. Exceptionally they are so large as to cover the lower part of the trunk and the upper part of the thighs, and are then called "bathing trunk" nævi. They may be smooth or they may contain hairs, sometimes of a fine downy kind.

Verrucose moles have their surfaces thrown into many convolutions or small excrescences, which may be either soft or hard. The color may vary from a pale yellow to a very deep brown. In size they may be very small, or they may cover a large extent of the cutaneous surface.

The *fatty mole*, or *nævus lipomatodes*, has an excessive fat and connective tissue hypertrophy, so that the mole presents a number of distinct soft lobulations.

The *hairy nævi*, or *nævi pilosi*, resemble the ordinary moles except that they contain a very extensive growth of hair, which may be either

downy or very coarse and which sometimes reaches a considerable length.

Another variety of nævus is the *blue one*, where the growths are a deep blue in color, not due to venous congestion. These growths are



Fig. 198.—This patient shows three types of soft nævi: first, a giant nævus of the bathing trunk variety; second, smaller pigmented nævi; and third, fatty nævi of the sole of the right foot. (Strobel's case.)

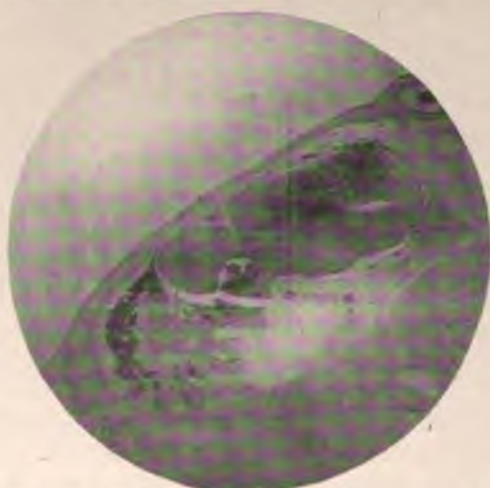


Fig. 199.—Histopathology of common pigmented mole. Notice the strip of normal fibrous tissue between the rete and the nævoid cells. Also note the pigment lying outside of the nævus.

usually rather small, but are stated to have a marked tendency to become malignant.

Pathology.—All of these growths have essentially the same pathology. In the upper part of the corium and separated from a flat-

tened rete by a thin zone of normal connective tissue lie closely packed masses of nævoid cells, which lie in columns. The individual cells are rectangular, contain a central nucleus, and stain well with the basic dyes. As indicated under the heading of etiology there is much uncertainty as to whether they are derived from the epithelium or the endothelium. Pigment is contained in these cells, but may also lie loose around the edges of the cellular masses.

Diagnosis.—In the vast majority of instances it is not possible to err in the matter of diagnosis, for the history of the congenital origin is definite.

Prognosis.—These growths do not disappear spontaneously, nor as a general rule do they enlarge to any extent. However it must always be borne in mind that if chronically irritated they may become malignant, forming the so-called malignant pigmented moles, melanotic sarcoma, melanotic carcinomata, melanomata, or nævo-carcinomata. When once a nævus becomes malignant widespread dissemination of the malignant cells immediately takes place, and as a result but one case has ever been cured. From these statements it must not be inferred that every pigmented mole is apt to become malignant, for this is certainly not true, but when subject to continued trauma such a growth is apt to take on malignant changes, and the future is then hopeless.

Treatment.—Nævi are not ornaments; a proper scar is much more sightly. In addition any growth that is subject to irritation, that is acquired during extrauterine life, or that shows any signs of growth, should be immediately removed. The very large growths should not be touched. Small growths may be removed by the knife, by the electric needle, or by carbon dioxide snow. However the propriety of using the last mentioned therapeutic agent is doubtful, to say the least, for there can be no question but that it frequently leaves some nævus cells behind. Bloodgood tells me that he has recently excised three congenital moles that had been treated with carbon dioxide snow and that in every one of them he found many nævoid cells. To leave such cells behind is to directly invite trouble. If the electric needle is used it must be used deeply and skilfully so as to get out the last remnants. I do believe, however, that it has a true field in the treatment of very small growths.

MULTIPLE BENIGN CYSTIC EPITHELIOMA.

Synonyms.—Acanthoma adenoides cysticum; Tricho-epithelioma papillosum multiplex; Epithelioma adenoides cysticum.

Definition.—Multiple benign cystic epithelioma is a disease of

unknown etiology, characterized by the presence of discrete cystic nodules.

Occurrence.—Well marked examples of this disease are very rare, but it is questionable if mild cases are not more frequent than is generally supposed, and that they escape diagnosis.

Etiology.—These growths spring from the rete, but the exact cause is unknown. In certain instances several cases have been observed in one family.

Symptomatology.—The disease is characterized by a number of small, pinkish or grayish nodules, that are usually seated upon the



Fig. 200.—Multiple benign cystic epitheliomata. (Collection of Dr. Charles J. White.)

face, but that may affect other portions of the body. They are rarely more than a quarter of an inch in diameter, and at first are discrete and may later become confluent. They are rounded and protrude to some extent beyond the surface. The overlying skin is tense and may show dilated capillaries. They are firmly imbedded in the skin. The lesions are very chronic, and do not involute spontaneously, but only rarely do they become malignant.

Pathology.—Sutton⁴ has done much to clear up the pathology of

⁴ Sutton: Jour. Amer. Med. Assn., 1912, lviii, 333; Jour. Cutan. Dis., 1911, xviii, 480.

this group of tumors. There are two distinct classes, those that spring from the rete proper, and those that arise from the hair follicles, although clinically the two cannot be told apart. The following is quoted from Sutton's report: "Extending downward into the cutis from the basal layer of the epidermis were numerous long, slender chains of epithelium, two or three cells in width, which terminated in bulb-like cysts, filled with colloid substance and corneous material. The chains were composed of cylindrical epithelium which reacted to the various stains exactly similar to the apparently normal cells in the overlying epidermis."

Diagnosis.—Multiple benign cystic epithelioma must be diagnosed from syringocystadenoma, adenoma sebaceum, molluscum contagiosum, colloid degeneration and hydrocystoma. From the last three diseases it can be told by the fact that when punctured there is no escape of a fluid or semi-fluid material. Molluscum contagiosum is also a disease of childhood. In adenoma sebaceum the small reddish papules are symmetrically arranged upon the anterior portions of the cheeks and appear early in life. Syringocystadenoma almost exactly resembles multiple benign cystic epithelioma in many instances, but if pilocarpine be given beads of sweat will surmount the lesions of the former, which is not true of the latter.

Prognosis.—The lesions are sure to last throughout life unless removed, and there is some danger of their becoming malignant.

Treatment.—Probably excision is the surest method of effecting a cure, but in the case of small lesions electrolysis might be resorted to. Large measured doses of the X-ray should prove of value.

SYRINGOCYSTADENOMA.

Synonyms.—Xanthoma tuberosum multiplex; Cellulome epithelial eruptif; Navi epitheliaux kystiques; Hæmangio-endothelioma cutis papulosum; Navi cyst-epitheliomatosi disseminati.

Definition.—Syringocystadenoma are small, benign tumors, springing from the sweat ducts, and of unknown etiology.

Occurrence.—These growths are very rare.

Etiology.—These little growths spring from the sweat ducts, but the exact cause is unknown, although Sutton⁵ is inclined to believe that they spring from misplaced embryonic cells.

Symptomatology.—The disorder is characterized by multiple, small, whitish or pinkish papules, which are rarely more than an eighth of an inch in diameter, and which are usually situated upon the upper portion of the trunk or about the face. There are no sub-

⁵ Sutton: Jour. Amer. Med. Assn., 1912, lviii, 333.

jective symptoms. The lesions are usually discrete but may coalesce.

Pathology.—The following account is an abstract from Sutton's paper. "Scattered throughout the cutis were large numbers of rounded or oval masses of epithelium, and epithelial-lined tubules. Many of these cell collections possessed a stem-like appendage of epithelial cells, two cells in width, which frequently connected with two or more of the glandular masses. The nuclei of the cells were large, and stained much more deeply than those in the epidermis. In several of the microscopically normal sections from both sides of the trunk



Fig. 201.—Syringocystadenoma. (Collection of Dr. Richard L. Sutton.)

similar strands of epithelial cells were found, and in one specimen several budding processes and a few cysts were present."

Diagnosis.—These little growths must be distinguished from the same dermatoses as must the multiple benign epitheliomata, so the reader is referred to the section dealing with them.

Prognosis.—The tumors do not tend to disappear spontaneously, and it is possible that they might undergo cancerous degeneration, hence it is safer to remove them. If this is not done they should be carefully watched.

Treatment.—The growths may be removed by the electric needle or by the knife.

ADENOMA SEBACEUM.

Synonym.—Adenoma of the sebaceous glands.

Definition.—Adenoma sebaceum is a rare affection, consisting of hypertrophied sebaceous glands, and situated upon the anterior portions of the cheeks.

Occurrence.—The disease is usually considered rare. Crocker calls attention to the fact that in England the disorder is often seen in the insane asylums and in the half-witted.



Fig. 202.—Adenoma sebaceum. Sister also affected. (Gilchrist's case.)

Etiology.—The exact cause of this malady is unknown; it usually develops early in life, and may affect more than one member of a family. Those affected are often the subjects of a retarded mental development.

Symptomatology.—The new growths usually appear shortly after birth, but in exceptional instances may not develop until after puberty. The lesions are chiefly located upon the anterior portions of the cheeks and in the naso-facial grooves, but may also be present upon the chin, nose and forehead. They are usually symmetrically distributed. The individual lesions vary in size from one-sixteenth to

one-quarter of an inch, are well defined, reddish, semiglobular papules and are persistent. There may be dilated capillaries in the overlying skin. There are no subjective symptoms.

Pathology.—Practically all authors agree that the tumor masses consist of hypertrophied sebaceous glands, and that they are not true adenomata. Sutton,⁶ however, considers that in one of his cases there were some true elements of an adenoma. In addition there may be hypertrophy of the collagen and more or less chronic inflammation.

Diagnosis.—If one bears in mind the facts that the tumors start early in life, that they are symmetrically placed upon the cheeks, and that they are red papules, not cystic, the diagnosis is easy. Acne is probably more apt to confuse the observer than is any other condition, but it is always associated with blackheads, and usually with some pustulation; in addition there are some lesions upon the forehead.

Prognosis.—The disease does clear up spontaneously.

Treatment.—The treatment is entirely surgical. Perhaps the best way of removing the lesions is by means of the electric needle, the needle being attached to the negative pole of a galvanic battery. Curettage and cauterization is also successful, but leaves more scarring.

ADENOMA OF THE SWEAT-GLAND.

Synonyms.—Spiradenoma; Spiroma; Adenoma sudiporum.

Adenomata of the sweat glands are very rare. Unna remarks: "The true cases of spiradenoma fall into two groups, according as they are the accidental accompaniments of other dermatoses, and especially of other tumors, or independent structures, consisting only of adenoma." The latter are as rare as the former are numerous. The former may be associated with cancer, angioma, lupus, neurofibroma, and varices of the leg. Of the independent growths there are only seven upon record. There at present deep-seated nodules that are well encapsulated. The growths should be removed with the knife.

ADENOMA OF THE SWEAT-DUCT.

Synonym.—Syringoadenoma.

It is probable that adenomata of the sweat ducts are not as rare as has been believed. For instance, the syringocystadenomata are examples of growths of this kind. But adenomata springing from these ducts also occur as independent tumors as I⁷ have noted in my book upon cancer of the skin. The tumors are usually fairly superficial,

⁶ Sutton: Jour. Cutan. Dis., 1911, xxix, 480.

⁷ Hazen: Cancer of the Skin, St. Louis, 1915.

and form a semiglobular growth upon the surface of the skin. They are definitely encapsulated, and can be easily peeled out at operation.

ADENOMA OF THE SEBACEOUS GLANDS.

Unna refuses to admit that there are any authentic cases of this disease upon record, although he admits that such probably do occur.

HYPERTROPHY OF THE SEBACEOUS GLANDS.*

Simple hypertrophy of the sebaceous glands may occur as the accompaniment of other dermatoses, or as independent tumors. The former are very often associated with chronic seborrheic conditions and with acne, as well as with rosacea. The latter form isolated, discrete, slow-growing, yellowish tumors which rarely measure more than a quarter of an inch in diameter, and which protrude above the surface of the skin, showing a central gaping follicle. They may be confounded with milia, xanthoma or seborrheic warts. They can be cured by surgical removal, either with the knife, the cautery, the curette and cautery, or the electric needle.

SEBACEOUS CYST.

Synonyms.—Steatoma; Atheroma; Wen.

Definition.—A sebaceous cyst is a globular cystic tumor, due to the retention of sebaceous material.

Occurrence.—Wens are very common in almost every surgical dispensary, although they constitute but two-tenths of one per cent of cases seen by the dermatologist.

Etiology.—Wens are due to the retention of sebaceous material in the glands and ducts, and small ones quite frequently accompany acne, especially of the back. They are due to an occlusion of the duct, whether this be due to inflammation, or the overgrowth of epithelium following injury, or some other cause, or the excessive keratinization of the mouth of the duct.

Symptoms.—Sebaceous cysts are most common upon the scalp, but may also occur with considerable frequency upon the back and shoulders, face and scrotum. They develop but slowly, and have often existed for months before they are noted. The growths may remain very small, or they may reach considerable size, sometimes becoming several inches in diameter. They may be single or multiple. The growths are discrete, globular, firm but compressible, adherent to the skin but freely movable over the underlying tissues. Where

* Pringle: Brit. Jour. Dermat., Jan., 1890.

attached most firmly to the skin an enlarged follicular mouth can be seen, and at times if the growths be firmly squeezed sebum can be expressed in the form of a long ribbon. The contents of these cysts is usually cheesy, but may be either liquid, or hard and friable. At times there is a distinctly rancid odor. Ordinarily these growths occasion their bearers no trouble, but they may become the seat of acute infections and form large abscesses, or more rarely they may undergo malignant degeneration.

Pathology.—The growth consists of a capsule and contents. The capsule consists of several layers of flattened epithelium. The surrounding fibrous tissue is also compressed.

Diagnosis.—The globular form, close attachment to the skin, history of long duration, and the presence of an enlarged follicle over the center of the growth should always make the diagnosis easy. Dermoids can be differentiated by the absence of this follicular mouth.

Prognosis.—It was formerly thought that the prognosis was good in all cases of wens unless suppuration should take place as the result of secondary infection. However Bloodgood tells me that as a result of his studies in the surgical-pathological department of the Johns Hopkins Hospital it seems certain that many of the malignant tumors of the skin, especially the carcinomata, develop directly from the walls of these growths, no matter whether they are large or small.

Treatment.—Very small wens may at times be cured by the evacuation of their contents and the filling of the sack with the tincture of iodine or with some caustic. However the removal with the knife is usually preferred by the majority of surgeons. Formerly they were simply peeled out, but Bloodgood is inclined to believe that they should be completely excised because of the possibility of cancerous changes taking place in them. In all cases it is necessary to destroy the sac.

DERMOID CYST.

Definition.—A dermoid is a cyst due to the late development of epithelial tissue that has wandered into the mesoblast, and characterized by the presence of a cystic tumor that contains various epithelial elements.

Occurrence.—There is still some question as to just how common dermoid cysts of the skin really are, for the dividing line between them and sebaceous cysts is still in dispute, many pathologists claiming that many of the latter are really examples of the former. Cysts containing hair and teeth are unusual.

Etiology.—Dermoids are due to the inclusion of epithelial elements in the mesoblast, and their later development. This inclusion

must take place at a very early date in foetal life, inasmuch as aberrant epithelial elements are often present; for instance teeth are not normally present in the skin of the body, and yet a dermoid of the trunk may contain such structures.

Symptomatology.—The growths occur as a general rule near the foetal fissures; they are most common at the root of the nose and upon the temples. They are globular, discrete, painless, cystic, slow-growing tumors, that are situated just beneath the skin, and that show no follicular mouth over their centers. They usually develop in youth. Their contents consist of horny masses and clear fluid, and hair, and their walls show the structure of the skin, with hair follicles and also cartilage, bones and teeth.

Pathology.—As already indicated, the study of the cyst wall is especially interesting, inasmuch as various epithelial growths may be noted here: hair follicles, teeth, cartilage, bone and occasionally of other elements originally derived from the epithelium. It must also be borne in mind, as Adams⁹ points out, that simple implantation cysts may result from trauma, and that these should not be confused with dermoids.

Diagnosis.—The diagnosis of a dermoid may usually be made from the location, from the appearance of the growth early in life, from the lack of a glandular opening and from the contents.

Prognosis.—True dermoids may grow to a very considerable size. There is also every reason to believe that they become malignant.

Treatment.—The treatment should consist of complete surgical removal, care being taken to remove the cyst wall completely.

MILIUM.

Synonyms.—Grutum; Strophulus; Acne albida; Pearly tubercle; White head.

Definition.—A milium is a small concretion, situated at the mouth of a sebaceous duct.

Occurrence.—Milia are of very common occurrence, nearly every adult having a number of them upon his face. However they are so trivial that they are commonly disregarded.

Etiology.—Milia are seen in persons of any age and sex, but are undoubtedly more common in adults, especially women. The affection is due to the retention of sebaceous material, probably due to the incomplete removal of horny scales from the surface of the skin where the ducts empty.

Symptomatology.—These little lesions are most commonly located

⁹ Principles of Pathology, vol. 1, 793.

about the eyelids and the adjacent skin, but may occur upon any portion of the body, the genitalia being fairly frequently affected. The growths are discrete, horny, white or grayish, hard, horny concretions that are situated at the follicle mouths, and that are covered by a very thin layer of epidermis. They are somewhat oval in shape and

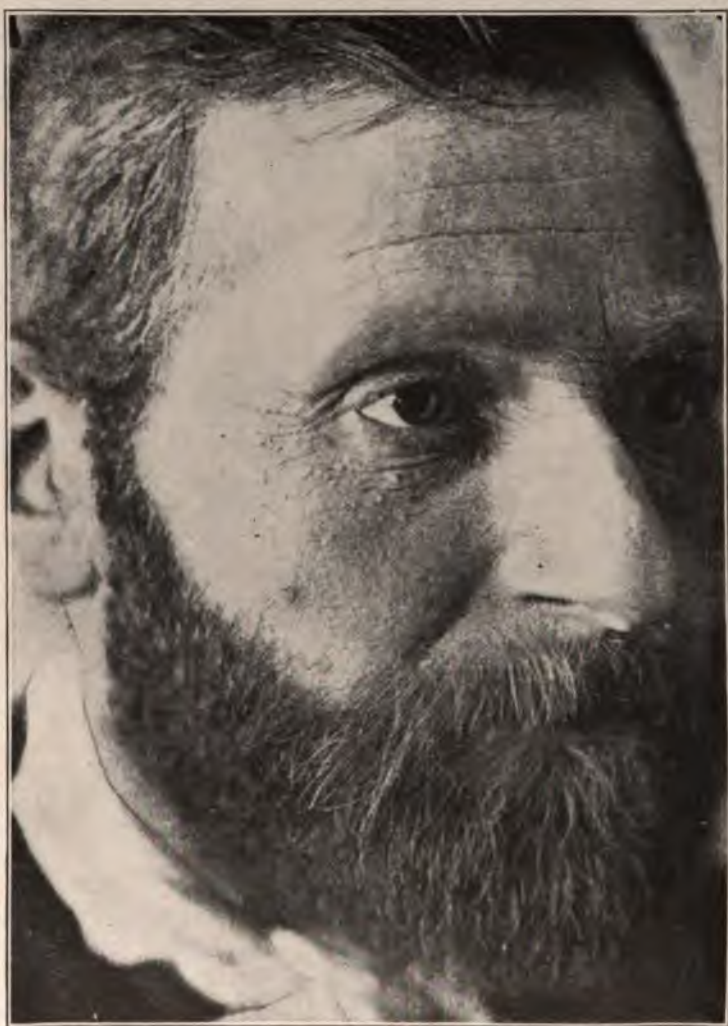


Fig. 203.—Millum. (After Ohmann-Dumesnil.)

are rarely more than one or two millimeters in length. They develop very slowly, and usually remain stationary for years, but eventually are apt to break through the skin and drop out. There are no subjective disturbances.

Pathology.—It is still disputed whether the retention takes place primarily in the hair follicle or in the sebaceous gland, while there are some who believe that it may take place in either place. The milium consists of inspissated sebaceous matter that not infrequently becomes calcareous. The growth is covered by a thin layer of flattened and slightly atrophic epidermis.

Diagnosis.—If the hard nature and superficial location of these little growths be kept in mind there is rarely little difficulty in making a diagnosis. Blackheads can be confused, but are situated more deeply, and are not so stony hard.

Treatment.—The overlying skin should be pricked and the milium squeezed out.

CHAPTER XXVIII.

CANCER.

The problem of cutaneous cancer is a serious one, for nearly two per cent of all dermatoses are cancerous in nature, and if these growths are not recognized and correctly treated at an early date the ultimate outlook is always serious.

In recent years the brilliant work of Krompecher in Germany, so ably seconded by Bloodgood in America, has definitely established that skin cancers may originate, not only from the different epithelial structures of the skin, but also from the different layers of these structures. These men have gone even further and shown that in rapidity of growth and in the power of metastasizing these tumors differ markedly one from the other. There are, of course, the following epithelial structures from which cancers may arise:

1. The surface epithelium.
2. The hair follicles.
3. The sebaceous glands.
4. The sweat glands.
5. The sweat ducts.
6. Congenitally displaced epithelial structures.

Three varieties of cancer may spring from the surface epithelium, those originating in the prickle cells, those in the basal cells, and those in the transitional epithelium or cuboidal cells. In the light of our present knowledge cancers originating from the hair follicles arise from the basal layer alone. Concerning the growths that have their origin in the glands it is theoretically possible that they might arise from the basal cells or from the more highly differentiated secreting cells, but with the present laboratory technique this question is not as yet definitely settled. The *nævo-carcinomata* (malignant pigmented moles or *sarcomata*) spring from misplaced tissue existing in various types of *nævi*.

A consideration of these facts will give the basis for the following classification:

1. Prickle or squamous-celled cancer.
2. Cuboidal-celled cancer.
3. Basal-celled cancer.
4. Cancer of the sebaceous glands.

5. Cancer of the sweat glands.
6. Cancer of the sweat ducts.
7. Nævo-carcinoma—malignant pigmented mole.
8. Paget's disease.
9. Carcinoma en cuirasse.

In dealing with all types of cancer it cannot be too frequently emphasized that all cancers of the skin spring from some pre-existing abnormality, and that they never originate in healthy epithelium.

A fairly full bibliography of skin cancer, together with a detailed account of the different types may be found in my recent book upon skin cancer.¹

PRICKLE-CELLED CANCER.

Synonyms.—Spino-celled cancer; Squamous-celled cancer.

Definition.—A prickle-celled cancer is a carcinoma originating in the squamous cells of the lip or mucous membranes, and nearly always metastasizing.

Occurrence.—Prickle-celled cancers are unfortunately very common, although they are more frequently encountered by surgeons than they are by dermatologists. Most of the cancers arising upon the mucous membranes and upon the extremities are of this variety, while they are rather infrequent upon the skin of the face.

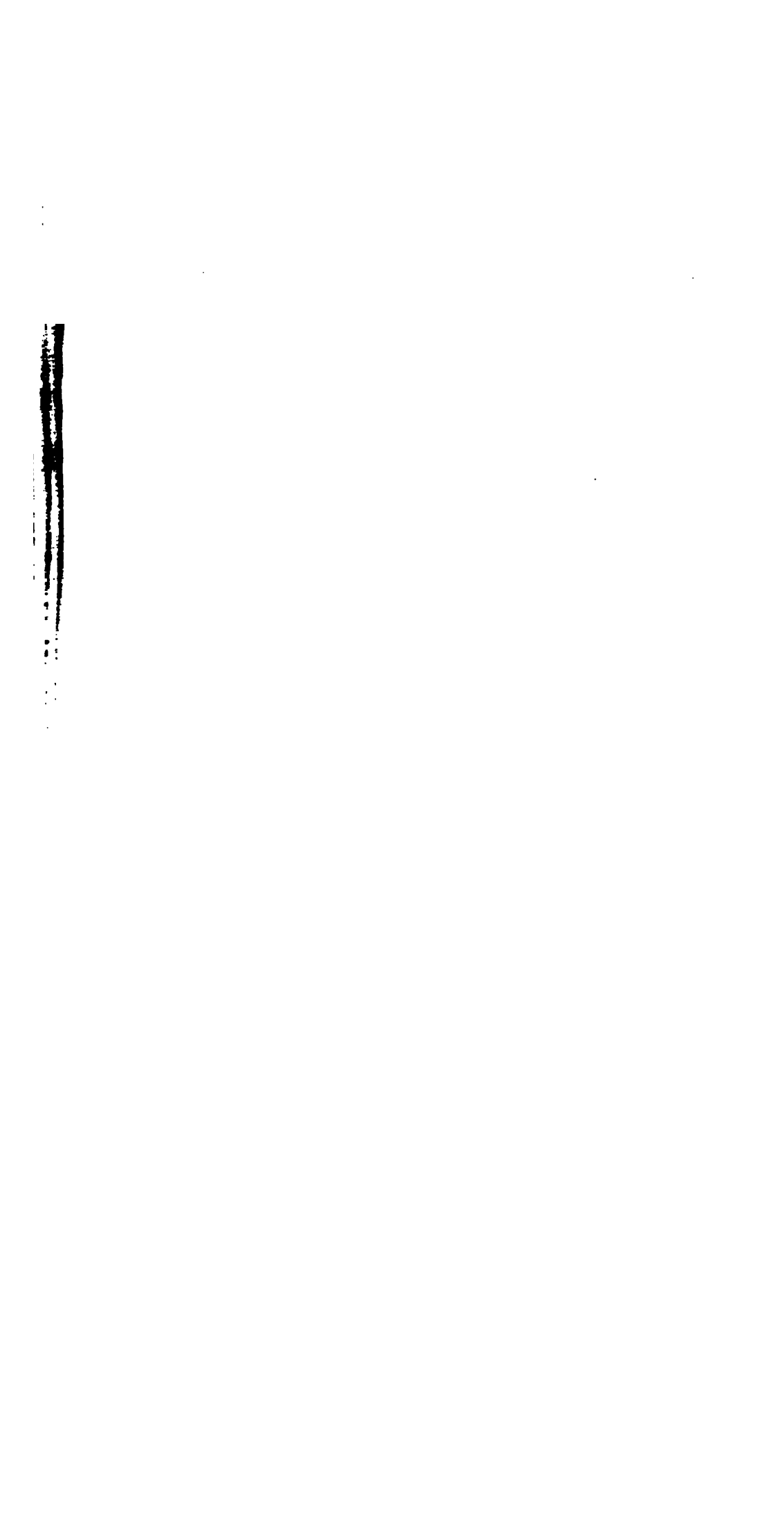
Etiology.—The exciting cause of cancer is unknown. Concerning it there are many theories. Some think that it is due to a change in the blood that permits of the riotous overgrowth of epithelial cells. Cohnheim advocated the "anlage" theory, that it was due to the congenital displacement of some epithelial cells, and their later malignant overgrowth. Ribbert believed that there was a natural antipathy between the growth of fibrous tissue and of epithelium, and that a weakness on the part of the former would permit the too free growth of the latter. By others it has been thought that atypical mitosis was the cause, while many others have advocated a parasitic causation. Of late Erwin Smith, of Washington, has shown that plant cancer may be caused by bacteria. So far this is the most definite piece of work that has been done, if we except Rous and Murphy's demonstration that chicken sarcoma can be reproduced by a filterable virus. Theories of causation are very numerous.

From a clinical point of view it is most important to remember that cancer of the skin, like cancer of all other organs, never develops upon a healthy basis, but always arises from diseased or abnormal tissue. The lesions from which cancer may arise are known as precancerous

¹Cancer of the Skin, St. Louis, 1915.



Fig. 204.—Prickle-celled cancer originating in an old lupus vulgaris lesion.
(Collection of Dr. M. L. Heidingsfeld.)



dermatoses. Those from which spino-celled cancer are apt to arise are the following: Seborrheic warts (senile warts, senile keratoses), especially those of the lips and hands; arsenical keratoses; simple keratoses, especially of the extremities; X-ray ulcers and keratoses; cutaneous horns; scars from burns or wounds that have healed by granulation; lupus vulgaris; sinuses leading to infected bones; rarely syphilitic or varicose ulcers; rarely almost any other type of chronic dermatosis. In dealing with cancer of the lip or tongue it must be borne in mind that tobacco has an undoubted action that favors the growth of cancer, as proven by its absence in women and non-smokers. Especially dangerous is the smoking of a pipe with a very hot stem, or of a cigarette that adheres to the lip, thus tearing off some epithelium when removed. The so-called smokers' patches, or leukoplakia, of the tongue are very apt to end in cancer. Of course not all of these lesions result in cancer, but enough of them do to warrant their removal at an early period of their development.

Cancer rarely affects the young; it is much commoner in those past forty years of age. Heredity seems to have no influence; neither has it been demonstrated that the disease is contagious.

Symptomatology.—The commonest place where this type of cancer is observed is upon the lower lip, next upon the skin, especially that of the extremities and lower portion of the trunk, next upon the penis, and lastly upon the tongue. However it may develop upon any portion of the cutaneous or epithelial coverings.

As already stated cancer does not develop in normal skin, but always from a pre-existing abnormality. The first change noticed is usually the formation of a minute lump, which rapidly grows larger and then ulcerates, a scab covering the patch. From time to time this scab either falls off or is removed, and then it is noted that the area of ulceration is a little larger. The granulation-like tissue at the base bleeds rather readily upon slight trauma. Even at this period palpation will disclose an area of hard induration, both beside and beneath the ulcer.

Growth is usually rather rapid, and the resulting tumor is either fungous or ulcerative—fungous if the tissue beneath is firm and difficult for the cancer cells to penetrate, and ulcerative if it is easy to invade. When fully developed such a tumor is characteristic; the surface is usually very irregular and more or less verrucose, the tissue resembling a dirty granulation tissue that is very friable. The edge is sometimes slightly elevated, and is almost always of stony hardness. This type of cancer practically always forms metastases to the lymph glands, sometimes within a month of its first appearance, and sometimes not for several years. The first chain of glands are usually first

affected, but at times the cancer cells pass through them and affect a deeper chain. The vast majority of surgeons and dermatologists do not realize the importance that should be attached to this habit of forming metastatic growths; this property makes the problem of spino-celled cancer of the skin identical with the problem of cancer of the breast. Patients usually die with metastatic growth in the glands or in the viscera. The duration of life is rather longer than in cancer of most of the other organs, but the fate of the improperly treated is the same.

Special Varieties.—*The spino-celled malignant wart* is the only variety of squamous-celled cancer which is not apt to metastasize. This



Fig. 205.—Prickle-celled cancer of lip that arose after treating a clinically benign lesion with a caustic paste. (Collection of Dr. Gilchrist.)

tumor is characterized by the formation of a more or less pedunculated wart, the malignant change taking place only near the surface and not invading the base. This can usually be determined by palpation, it being remembered that an inflammatory exudate can simulate cancerous infiltration. Complete local removal will suffice to cure this variety of cancer, which is rather infrequent, but which may occur upon either the skin or mucous membranes.

Cancer of the lip is usually of the spino-celled type, at least ninety-five per cent being prickle-celled. Nearly half of the carcinomata of the upper lip are basal-celled, however. These growths are apt to be

caused by the irritation of jagged teeth, from chronic fever blisters, from seborrheic keratoses, and from burns from tobacco. They may be either ulcerative or fungous, or a combination of the two, but usually metastasize rather promptly, although the growth in the glands may not be manifest for years after. I know of one case in which local operation alone was done and in which the glands were found cancerous after an interval of fourteen years. If the growth has existed for more than a month the glands should be taken out in a block operation. This has been very well described by Sowers in his article upon cancer of the lip in my book upon Skin Cancer.

Cancer of the extremities is nearly always spinous-celled, and consequently demands the removal of the glands. If this is done any resulting growth will be between the cancer and the axillary or inguinal glands, and hence operable.

Cancer of the penis is more apt to develop in the uncircumcised in whom there is a considerable retention of smegma, this acting as an irritant. Treatment demands removal of the local growth, of the posterior chain of lymphatics and of all the inguinal glands. If the growth be at all extensive the penis must be amputated.

Cancer of the tongue is secondary to some pre-existing lesion, often leukoplakia, a syphilitic lesion, or an epithelial hypertrophy of some kind. If the lesion is seen before the diagnosis of cancer is certain it should be removed with the actual cautery; if the diagnosis is certain the glands should be removed and the floor of the mouth burned from beneath with the actual cautery, then after a short interval the cancer removed and the floor of the mouth burned from above with the actual cautery, until the two charred areas meet. In extensive cases the jaw-bone must be removed, although this often causes a postoperative pneumonia.

Pathology.—The cell type resembles that of the squamous epithelium, although the cells no longer show their prickles. Under the microscope there are a number of characteristic things: the cancerous alveoli are large and invade deeply; the cells are large and stain with acid dyes such as eosin rather than with the basic dyes such as hæmatoxylin. There is a great tendency for whorl or pearl formation. The individual cells often show abnormal mitotic figures. Around the edges of the lesions there is usually considerable infiltration with small round and fixed tissue cells and occasionally with polymorphonuclears. Secondary growths in the glands show the same general histological picture.

In the gross a section through such a neoplasm shows that the invasion is relatively deep and that the cancerous acini are large, resembling white threads radiating downward and outward.

Diagnosis.—In the very early stages it is often impossible to tell whether or not a lesion has become cancerous. In a little later stage it is difficult to tell a spino-celled carcinoma from a basal-celled one. In the same stage such a cancer may be simulated by a chancre, by a syphilitic or tuberculous lesion or by blastomycosis.

At the onset we usually determine malignancy by the combination of ulceration and induration. In case of doubt the lesion should be considered and treated as malignant—that is, excised and then examined pathologically. In regard to telling the difference between spino- and basal-celled growths we should lay considerable stress upon the precancerous lesion, and upon the location of the tumor, remembering that basal-celled tumors predominate upon the face and shoulders,

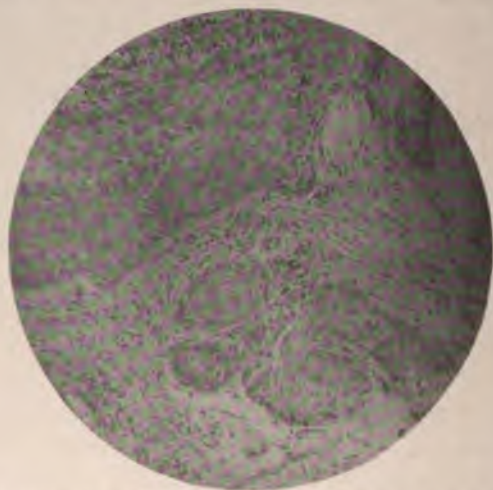


Fig. 206.—Low power photomicrograph showing histopathology of a prickly-celled carcinoma of the skin.

while the more malignant types are in the great majority upon every other portion of the body, especially upon the mucous membranes and extremities. In addition a basal-celled cancer grows slowly, a prickly-celled one rapidly; the former usually has a comparatively smooth surface while the latter has a rough, papillomatous aspect. In the late stages we find no enlarged glands with the former, while we may with the latter.

A chancre, particularly of the lips, may cause trouble, but certain general rules should help one. A chancre may develop upon normal skin or epithelium, while a cancer develops at the site of some pre-existing abnormality or lesion; the former grows very rapidly and is shortly accompanied by the swelling of the regional glands, neither of which fact is true of cancer. Cancer of the upper lip is rare,

while chancre is equally common upon the two; cancer of the lip is very rare in females, while chancres of the lip are not uncommon in this sex. After several weeks chancre gives a positive Wassermann reaction, and at an early date the spirochætes may be found by a dark-field examination.

A gumma rarely simulates a cancer for the reason that it usually has no ring of induration, but exceptionally this may occur, and the diagnosis can then only be made by laboratory examinations, especially the Wassermann. In doubtful cases one or two intravenous injections of salvarsan might be employed, but all suspicious cases should be treated as cancer.

Tuberculosis lesions practically never have the hard edge of cancer, so the differential diagnosis should not be difficult. In addition it should always be borne in mind that tuberculosis of the skin always develops in the young, and cancer usually in those past middle life.

The lesions of blastomycosis may closely resemble cutaneous carcinoma, but usually lack the stony hardness, and in addition the organisms can be found in the pus that exudes from between the hypertrophied papillary processes.

A word of caution must be sounded against the pernicious practice of excising a bit of the growth for microscopic study. If this be done in the usual way the blood vessels and lymphatics are left open and gaping, and cancer cells may easily enter them and become disseminated. The correct thing to do is to excise the entire tumor, and then examine that. If it be deemed absolutely necessary to do a biopsy this should be performed with the actual cautery or with an old knife heated to a cherry red.

Prognosis.—If a spino-celled cancer is recognized at an early stage and completely removed, together with its draining glands, the prognosis is good, but if the growth alone be excised the prognosis is very dubious. At least ninety-five per cent of the early cases should be cured by a complete operation.

Treatment.—It is highly probable that if the cases are seen before they are more than a month old local removal will suffice; however the patient's word should never be taken upon this point, no matter how honest or intelligent he may be. In all cases where there is any doubt the lesion should be completely excised and then examined; if the growth is of the spino-celled type the neighboring glands should be removed. Of course the ideal operation is a block operation, where first the glands, next the lymphatic bearing tissue and finally the cancer, with underlying fat and fascia, are removed in one piece. In growths upon the nose or scalp such a block operation is impossible and both the growth and glands should be excised.

All methods of destroying the primary growth that do not permit of its histological examination are to be unreservedly condemned: these methods include X-ray, radium, fulguration, caustic pastes, etc. After the diagnosis is established one of these methods may be considered, but never as a primary procedure. There is no question but that any of them, if properly done, will cure even a prickle-celled cancer, but inasmuch as a block operation should often be attempted their use is necessarily restricted. The secret of treatment is to make an absolute diagnosis at an early date, and then remove not only the cancer but the glands as well, preferably with the lymphatic vessels that connect the two.

The inoperable cases should be given the benefit of X-ray, inasmuch as it will usually render the patient more comfortable, even though it does not effect a cure.

A fairly complete bibliography may be found in my book upon Cancer of the Skin.

CUBOIDAL-CELLED CANCER.

At times one encounters a type of cancer in which the histological picture resembles that of the spino-celled variety, but in which no epithelial pearls appear, and in which the cells are hardly as large as in that type. This is the so-called cuboidal-celled cancer, which springs from the cuboidal or transitional cells that lie between the basal and squamous cells of the skin or mucous membrane or skin. These tumors are either ulcerative or fungous, and grow more slowly than do those just described. However they usually metastasize, although just how early is not definitely known. They should be treated just as are the malignant ones that have just been described.

BASAL-CELLED CANCER.

Synonyms.—Rodent ulcer; basal-celled carcinoma; Epithelioma; Canceroid; Jacob's ulcer; Superficial skin cancer.

Definition.—A basal-celled cancer is a malignant neoplasm that springs from the basal cells of the skin or mucous membranes, and that is characterized by local destructive growth and by not forming metastases.

Occurrence.—These tumors are fairly common, constituting a little more than one per cent of all dermatoses.

Etiology.—These growths rarely develop in a person under forty years of age, and are slightly more common in men than in women. The exciting cause is unknown, but it is definitely established that they spring from pre-existing lesions of some kind, especially from

seborrheic keratoses (senile warts). They may arise from subepidermal nodules, which are often glandular in type, from fibro-epitheliomata, from scar tissue, and in fact from almost any pre-existing lesion, but only rarely from moist or weeping lesions. Hyde has called attention to the fact that exposure to sunlight is often a great factor in their development, but sunlight acts simply by causing senile keratoses, which later become malignant.

Symptomatology.—These lesions are especially common upon the face, especially around the eyelids and in the naso-facial grooves, but may occur elsewhere upon the face, even upon the upper lip, and very exceptionally upon the lower lip. They are fairly common upon the



Fig. 207.—Cuboidal-celled cancer originating in an old varicose ulcer. These tumors should be treated just as are the prickle-celled growths.

shoulders and upper portion of the trunk, but are rare upon the lower part of the body, and are really unusual upon the limbs. Upon the mucous membranes they are greatly outnumbered by the spino-celled growths.

The first thing noted is either a little nodule beneath the skin or else a surface ulceration, that soon crusts over, and from which the scab occasionally drops disclosing an area that looks like granulation tissue and that bleeds easily upon trauma. Each time the crust is displaced it is noted that the ulcer is a bit larger. As a rule there is no pain whatever. The further course varies a bit. There are several types that must be described.

The *flat basal-celled neoplasms* usually show some amount of surface ulceration, but lack either deep ulceration or fungus formation,



Fig. 208.—Early basal-celled carcinoma approaching the rolled-edge type. A common location. (Poole's collection.)



Fig. 209.—Typical rolled-edge rodent ulcer that originated in a senile keratosis. (Collection of Dr. M. L. Heidingsfeld.)

neither is there a distinctly nodular edge. However deep infiltration can always be felt, and some nodules can be seen at the edges.

Rolled edge rodent ulcers are characterized by a high, rolled, stony hard margin of a pinkish-white color, over which many dilated venules can be seen. The space within the border may be ulcerated or covered by skin. These tumors may grow fairly rapidly, often reaching a diameter of an inch within a year.

Nodular basal-celled cancers appear at first as small papules, that eventually become larger, until they reach nearly an inch in diameter. Then they break down in the center, leaving a hard raised edge. They usually grow rather slowly.

Depressed scar-like epitheliomas are characterized by a sunken area of induration that markedly resembles a depressed scar. As a rule



Fig. 210.—Nodular basal-celled carcinoma that arose from a senile keratosis. (Collection of Dr. M. L. Heidingsfeld.)

they show no ulceration until comparatively late. They can only be diagnosed by the deep infiltration, and are often overlooked for a considerable time.

The *morphea-like cancers* are of a snowy white color, almost exactly imitating a patch of morphea at the onset. However later on they show distinct pearly nodules at the edges, and ulceration may occur.

Cicatrizing growths are rather uncommon, but do occur. They heal spontaneously in the center with the formation of heavy scar tissue, but typical nodules can always be seen at the borders. These cancers may reach a very considerable size before any active ulceration occurs.

Fungous growths occur when the underlying tissue is very resistant to invasion. The growths resemble dirty granulation tissue, but are dirty and streaked with white. The surface is usually fairly smooth. These tumors may soon reach a size of several inches, and protrude for more than an inch beyond the normal level of the skin.

Deep ulcerating growths are rather uncommon, but nevertheless often occur; basal-celled cancers can attack bone and periosteum.

Basal-celled cancers never metastasize, but exceptionally they may be complicated by the development of a spino-celled neoplasm which will rapidly form metastases. If a rodent ulcer be not completely removed it will steadily grow for many years, and will eventually cover a large surface. Death results from intercurrent infection, exhaus-



Fig. 211.—Rodent ulcer that has spontaneously healed in the center. (Gilchrist's case.)

tion, the erosion of a large blood vessel or the invasion of the meninges.

Pathology.—These neoplasms spring from the basal cells of the skin or mucous membrane: they may be multicentric in origin. Multiple tumors not infrequently develop. The cells are small and stain intensely with basic dyes. At first they are arranged in solid masses, but later form long outgrowths. In some instances the cells become separated so that the general picture resembles a scirrhous carcinoma. Not infrequently they are arranged in long tubules. Epithelial whorls or pearls are never present. In the gross it can be noted that the infiltration is not deep and that the cancerous acini are small.

Diagnosis.—Neoplasms of this type must be distinguished from

spino-celled cancers, and from the lesions of syphilis, tuberculosis and blastomycosis. In general a basal-celled cancer may be diagnosed by its position, slow development and lack of metastatic growths. Most of the growths upon the skin of the face are of this variety. For a further discussion of the diagnosis the section upon diagnosis of spino-celled carcinomata should be consulted.

Prognosis.—If these growths are properly treated at an early stage the outlook is almost uniformly favorable, but after they have persisted for any length of time they are very hard to eradicate. While they seldom directly kill yet they cause great deformity.



Fig. 212.—Very extensive rodent ulcer of many years' duration. (Collection of Dr. M. L. Heidingsfeld.)

Treatment.—Before one attempts to treat any cutaneous cancer he should be absolutely certain as to its exact pathology. To cure a basal-celled cancer it is only necessary to completely remove it locally; inasmuch as it forms no metastases the removal of the lymph nodes is unnecessary. It should always be remembered that in the early stages such a cancer may have a multicentric origin, hence the removal must be wide. In addition the cancerous process may undercut the normal skin for a considerable distance. Various men have various forms of

treatment that they advocate: some believe in the knife, some in the actual cautery, others in the curette and caustic, and still others in either the X-ray, radium, fulguration or dessication, or in the use of caustic pastes. The knife has the advantage of leaving clean wounds that heal speedily and that leave but a small scar, while the tissue can readily be examined histologically. Personally I am inclined to be-



Fig. 213.—Ulcerating basal-celled carcinoma that arose in the scar of a syphilitic ulcer. (Collection of Dr. George H. MacKee.)

lieve that there are fewer recurrences if a caustic is applied to the edges of the wound after excision is complete. The cancer may be excised with the actual or electric cautery, and this is a particularly valuable method where there is but a small margin to spare. It is probable that this is without exception the best form of treatment,

for the edges are thoroughly cauterized and all blood vessels and lymphatics sealed at once, thus preventing the spread of cancer cells through them. In certain locations, as in tumors invading the orbit, the use of the curette, followed by the local application of some such caustic as the acid nitrate of mercury is of great value, and will occasionally suffice to cure an apparently hopeless case. If the X-ray is to be employed it should be used in one or two large doses, employing a hard tube. A tube of from 7 to 9 B. should be used and the first dose should be from 6 to 10 Holzknecht units. This may be repeated in about a month, and two treatments will often suffice to cure a superficial lesion. The X-ray is also of extreme value in holding in check the inoperable cases. Radium will probably accomplish nothing that

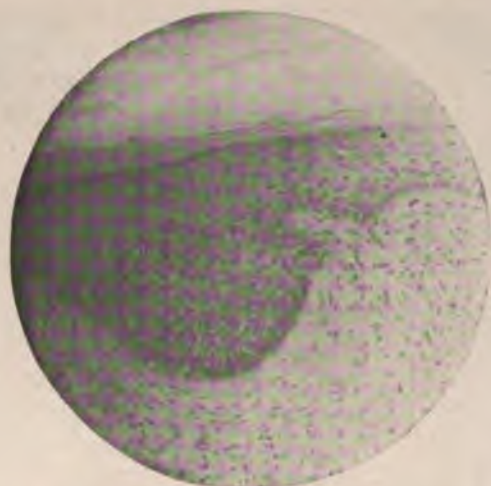


Fig. 214.—High power photomicrograph of a very early basal-celled cancer of the skin. (Gilchrist's case.)

the X-ray will not, and in addition it is hard to measure the dose. In certain locations it is easier to use than is the X-ray, but this is probably its only advantage. Its great cost is a serious drawback. Fulguration and dessication have many able advocates, but I must confess that I fail to see where they have any advantage over the actual cautery. Caustic pastes are used by many excellent dermatologists. Personally I have never resorted to them and never expect to for the following reasons: they are very painful; the depth of their action is hard to control, and they are not always effective, as proven by the fact that nearly half of the cancer cases entering the surgical department of the Johns Hopkins Hospital give a history of previous treatment

by one of these pastes. Zinc chloride may be used in the form of Bougard's paste:

R	Farinæ	3 ss	2.
	Pulv. amgli.	3 ss	2.
	Acidi arsen.	gr. iv	.3
	Hydrar. sulphat. rub.	gr. xx	1.4
	Ammon. chlorat.	gr. xx	1.4
	Hydrar. chlor. cor.	gr. ii	.12
	Zinci chlorid.	3 iv	15.
	Aquæ	3 i	30.

This paste is spread on gauze and applied over the area to be destroyed. The plaster should remain in position from twenty-four to forty-eight hours, and a fresh application may have to be made once

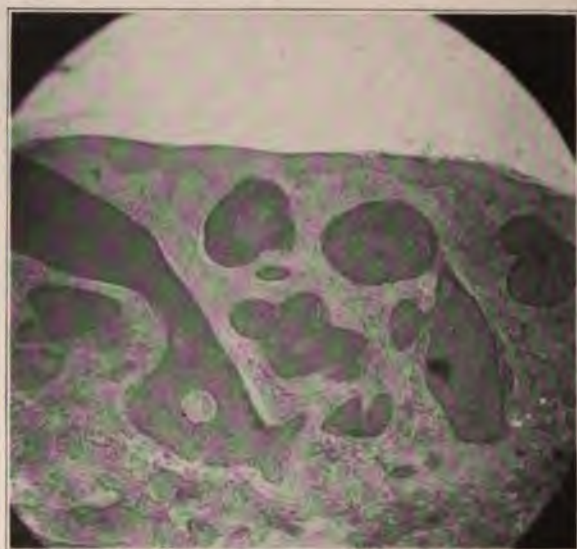


Fig. 215.—A very interesting low power photomicrograph of a basal-celled cancer that had been treated with the X-ray, so that surface healing took place. However, the deep cancerous process was not stopped. Probably too soft a tube was used, and certainly not sufficient exposure was given. In cases that have never been treated with the Röntgen rays it is not unusual to find that the carcinomatous process undercuts the normal epidermis to a considerable extent.

or twice. The separation of the slough requires from ten to twenty days. Arsenic pastes are still more popular, being used in the form of Marsden's paste:

R	Acidi arsen.	3 ii	8.
	Mucilag. acaciæ	3 i	4.

This paste is applied just as is the last, but twelve hours is usually

sufficient. It should never be employed over large areas, because of the danger of absorption.

Carbon dioxide snow is used by some men, but in the few cases in which I have seen it employed it has always failed.

No internal remedy is of the slightest service.

At the onset some method should be employed that permits of the obtaining of tissue for microscopic examination, as this is the only sure way of making a certain diagnosis in the early cases. The only exception to this rule is in the growths around the eyelid, which are almost invariably basal-celled, and which may be treated from the onset with the X-ray.

CANCER OF THE HAIR FOLLICLES.

In some exceptional instances pathological examination of a basal-celled tumor will show clearly that it had its origin in the hair follicles. These growths are rather uncommon and not especially malignant. It is probable that more of the rodent ulcers than is usually supposed really have their starting point in the basal cells of the hair follicles.

CANCER OF THE SEBACEOUS GLANDS.

Cancer of the sebaceous glands is very rare, at least it is not often recognized, even microscopically, possibly because the glands so soon change that the cells cannot be recognized. In one case that I had under my charge metastasis took place very early.

CANCER OF THE SWEAT GLANDS.

Cancer of the sweat glands is likewise rare, but is much easier to recognize than the neoplasm of the sebaceous ones, for the cell type is fairly well preserved. The growths start as deep-seated nodules that usually remain fairly well localized and from which metastases do not form with any rapidity. Local excision is sufficient.

CANCER OF THE SWEAT DUCTS.

Cancer of the sweat ducts has not been described although it doubtless occurs.

NÆVO-CARCINOMA.

Synonyms.—Malignant pigmented mole; Melanoma; Melanotic carcinoma; Melanotic sarcoma.

Definition.—A nævo-carcinoma is a very malignant tumor arising from a pigmented mole or nævus.

Occurrence.—These tumors are rather unusual, but are not rare, for every surgeon and dermatologist has seen a number of them.



Fig. 216.—Malignant pigmented mole with very numerous metastases in the skin. (Collection of Dr. John W. Perkins.)

Etiology.—These growths spring from ordinary raised or flat pigmented, non-hairy moles, or from various types of soft nævi. As a

rule a mole will not undergo malignant change unless it is the subject of chronic irritation; neither will it become malignant in a person under forty years of age.

Symptomatology.—As already indicated these growths are very malignant; by the time that the first changes are noticed in the mole or nævus wide-spread metastasis has usually taken place. These metastases are very prone to be widely disseminated throughout the skin, appearing at first as ordinary moles, but rapidly becoming larger. In some instances there are hundreds of these secondary growths throughout the cutis as well as in the glands and viscera. Metastasis seems to take place through the blood vessels as a general rule, but in exceptional instances it is through the lymphatics alone,



Fig. 217.—Malignant pigmented mole, the change having been induced by shaving over a common mole. (Collection of Dr. M. L. Heidingsfeld.)

and hence may remain localized in the glands for some time. In other individuals the primary growth assumes great size, and the secondary growths, while always present, are not especially numerous. Death almost invariably results within two years of the onset.

Pathology.—As already indicated under the pathology of nævi it is uncertain whether these growths take their origin from epithelial or endothelial cells, both views having many adherents. However it has been definitely proven that at least some of these neoplasms are of epithelial origin, while so far it has not been proven that any of them are of endothelial origin, hence it seems proper to include them under the carcinomata, at least provisionally.

Pathologically the growths consist of a rich matrix of spindle-shaped cells that contain much pigment, some pigment also lying loose in the intercellular spaces.

Diagnosis.—At the onset it is often difficult to determine whether or not a mole has become malignant, and from clinical examination alone it may be impossible to decide this question, but a pathological examination will usually clear up any doubt, for in the malignant condition the zone of normal connective tissue that lies between the rete and the naevoid cells is obliterated by the overgrowth of the latter. When the condition is once established there can be no doubt as to the diagnosis, the presence of multiple pigmented cutaneous and sub-cutaneous tumors speedily settling the question.



Fig. 218.—Low power photomicrograph showing histopathology of a malignant pigmented mole.

Prognosis.—The prognosis is very bad. So far there is the report of but one case that has recovered, although there are probably others.

Treatment.—The only satisfactory treatment consists of prophylaxis. Every pigmented mole that is subject to irritation and every acquired mole should be at once completely removed. When malignancy has been established operation is useless in the cases in which there is widespread dissemination through the blood vessels. However it should always be remembered that there are cases in which metastases take place through the lymphatics alone. In these cases complete local operation combined with a block dissection of the lymphatics will undoubtedly cure an occasional case.

PAGET'S DISEASE.

Synonyms.—Paget's disease of the nipple; Eczematoid epitheliomatosis; Cutaneous psorospermosis; Mammillaris maligna.

Definition.—Paget disease is a rare affliction, usually of the breast in which an eczematoid-looking eruption is associated with a deeper cancer.

Occurrence.—The disease is distinctly rare, yet every surgeon has seen a number of examples.

Etiology.—The cause of both the cancer and of the cutaneous eruption is still unknown, nor is the exact relationship of the two processes satisfactorily worked out as yet, although it is generally believed that the dermatitis is not the primary cause of the carcinoma.

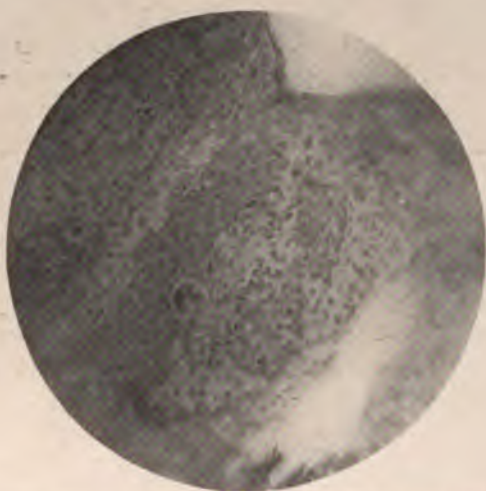


Fig. 219.—A low power photomicrograph showing the histopathology of Paget's disease of the breast.

Symptomatology.—The majority of the cases occur upon the breast of women, usually the right breast, and in those past forty years of age. A number of instances are now upon record where other portions of the body have been affected by this malady, the majority of these cases being upon the genitalia. The first symptom is a peculiar raw looking, eczematous condition around the nipple. This usually itches intensely, is rather sharply circumscribed and oozes to some extent. It is absolutely intractable to treatment. At a later date, from two to six years, cancer of the breast develops, sometimes just beneath the dermatitis, sometimes at a considerable

distance from it, there being no connection between the two. Upon the body the course is practically the same. In all instances the cancers are malignant, metastases invariably taking place.

Pathology.—The pathology of the dermatitis is absolutely characteristic. The intrapapillary processes are elongated and thickened, and there is some infiltration with small round and fixed tissue cells. The cells are degenerated, there being many vacuoles present, some of which contain fragmented nuclei, which were once thought to be coccidia. The corium also shows chronic inflammatory changes.

Diagnosis.—A chronic eczema may easily be confused with the dermatitis of Paget's disease. However, Paget's disease is usually more sharply margined, and has a peculiar granular, raw appearance, that is lacking in chronic eczema; then too it will not respond to treatment. However, the only absolute way to determine the diagnosis is to do a biopsy and stain a section, when the characteristic cellular degenerations can be found in Paget's disease, although lacking in eczema. Retraction of the nipple makes the diagnosis of Paget's disease certain, it also means that the cancerous process is advancing.

Prognosis.—In spite of the warning that the dermatitis gives, the prognosis is that of fairly well advanced cancer of the breast, which is not especially good.

Treatment.—In the very early stages the breast should be completely removed, and at once cut open and examined carefully. If any cancerous changes are found with the naked eye the complete breast operation should be done at the same sitting. The extramammary cases should be treated along the same lines, a wide and deep operation always performed, and if there be macroscopic evidences of cancer the neighboring glands removed at once.

CARCINOMA EN CUIRASSE.

Carcinoma en cuirasse is a rather rare condition that occasionally complicates carcinoma of the mammary gland. As a general rule cancer cells pass through the lymphatic vessels and lodge in the glands, but in this particular variety they grow within and completely fill the lymphatic vessels, perforate their walls and invade the tissue between them. Clinically there are a number of flat red nodules, that usually coalesce so as to form an indurated sheet beneath the surface, giving a picture somewhat like scleroderma, except that the color is reddish. The reddish isolated papules are often due to inflammatory exudates and not to cancer foci. Treatment is hopeless, although it is barely possible that massive doses of the X-ray might aid some cases.

CANCER IN THE NEGRO.

In general it may be said that the negro is not quite so susceptible to cancer as is the white man, but that there is no great difference. However, it must be noted that cancer of the skin is much less common, and that when it does occur, is almost invariably of the spinocelled variety. Negroes do not suffer from senile keratoses to the extent that whites do, and this is probably the reason that basal-celled carcinomata are so rare in this race. Cancer of the muccus membranes is certainly not so common as among the whites, although we see a few cases every year.

CHAPTER XXIX.

BENIGN TUMORS—NOT OF EPITHELIAL ORIGIN.

CICATRIX.

Synonyms.—Scar; Scar-tissue.

Definition.—A scar is a new formation of connective tissue, replacing a loss of tissue substance.

Occurrence.—Scars are very common, but as a rule physicians are not consulted for them.

Etiology.—If tissue loss extends below the epidermis it is replaced by a new formation of connective tissue over which epithelium grows. Purely epithelial losses are replaced by epithelium alone. The scar tissue is usually replaced by rather more than is needed, hence many scars are distinctly hypertrophic.

Symptomatology.—Scar formation depends entirely upon the loss of tissue. A linear scar results from a wound that has healed by first intention. The resulting formation is usually from one to two millimeters in width, this depending upon the skill with which the edges of the wound were brought together. Scars always become less prominent, owing to the shrinkage that takes place in them. At first they are of a bright red color, that fades to a dull pink, and then to a snowy white.

When there has been a loss of substance, and not merely a separation of it, the resulting scar may be either atrophic or hypertrophic. The former result from such diseases as small-pox, acne vulgaris, and many similar conditions, and are characterized by depressions in the skin, at first of a reddish color, but later of a white that can hardly be distinguished from the normal skin. The latter usually result when there has been a more extensive loss, both in depth and width, and protrude above the normal surface of the skin.

Pathology.—The first process in the course of repair is the formation of granulation tissue, so admirably described in Adami's little book—"Inflammation." This granulation tissue becomes converted into fibrous tissue, and the epithelium grows over from the edges, or new islets may spring up in the center from some epithelial cells that have not been destroyed. If examined at a late date the surface epithelium will be found thinner than normal, and the normal wavy dermo-epidermal line will be straightened out. The fibrous tissue is much thicker than normal, and the glandular elements are often missing, depending upon the depth of the injury.

Diagnosis.—A scar is usually very easy to diagnose, although it is sometimes difficult to say when a condition is a scar and when a keloid. In dealing with sunken scars one must always remember that there is a type of basal-celled cancer that almost exactly simulates them, and that can only be told by its greater depth of infiltration. Morphœa may also cause trouble, but does not follow an injury, so the history should serve as a guide.

Prognosis.—Hypertrophic scars can often be much improved, but the atrophic ones are best left alone.

Treatment.—Hypertrophic scars are best treated by means of the X-ray, using a filtered ray from a hard tube and giving six to seven Holzkmeecht units about once a month for two or three treatments. The injection of thiosinamine (or fibrolysin) may be tried, but in my experience has not proven helpful.

Atrophic scars are best left alone. They can sometimes be improved by the subcutaneous injection of paraffin, but the remedy is often much worse than the disease, inasmuch as the injected material may clump and form large nodules. It is also questionable if the paraffin may not cause cancer, for Schamberg¹ and others have clearly shown that paraffin may act as one of the predisposing causes of carcinoma.

KELOID.

Synonym.—Cheloid.

Definition.—A keloid is a fibrous new growth that to all intents is simply a markedly hypertrophic scar.

Occurrence.—Keloids are not especially common in whites, but are very common in negroes. According to Pollitzer they constitute over one-tenth of one per cent of all dermatological conditions. In the negro I saw 14 cases of keloid in 2,000 consecutive cases of skin disease.

Etiology.—In former years it was believed that there were two varieties of keloid, the false which arose as the result of trauma, and the true which was supposed to originate in normal skin. At the present time it is pretty generally conceded that all cases arise as the result of some injury, however slight it may be. In certain individuals there seems to be an almost uncontrollable tendency for all scar tissue to become markedly hypertrophic, a sort of fibrous diathesis as it were. The cause of this is not known.

Symptomatology.—As already noted, a keloid begins at the site of an injury, where there is some new formation of scar tissue, how-

¹ Schamberg: Jour. Cutan. Dis., 1910, xxviii, 644.

ever slight. This scar tissue gradually becomes hypertrophic, and although covered by normal epidermis, gradually protrudes above the surface of the skin in the form of a circumscribed, sharply-defined nodule. The color is a deeper pink than that of the neighboring skin. The surface is not smooth in the majority of instances but is wrinkled and lobed. The size varies. In some instances the keloid may be eight or nine inches in diameter, but is rarely more than two or three. At first it is seated in the upper portion of the skin,

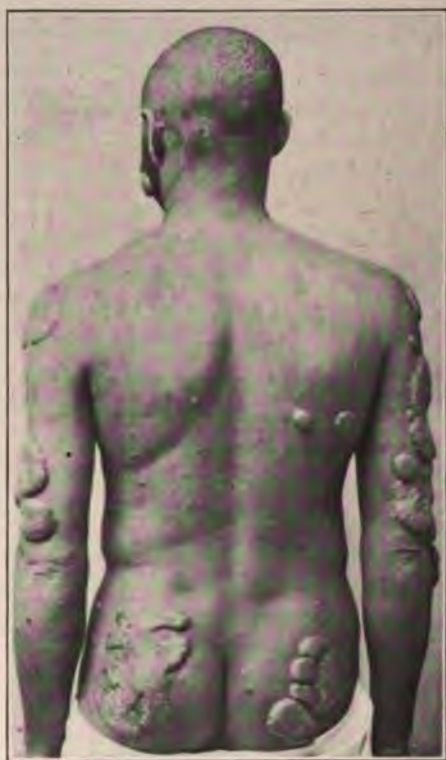


Fig. 220.—Keloid. (After Ohmann-Dumesnil.)

but later becomes pedunculated, especially in the negro race. In this race it is not infrequent to find multiple growths. Upon palpation the growth is very hard and firm, and is usually definitely rounded, in addition to being definitely encapsulated. A keloid is devoid of hair. As a general rule there are no subjective symptoms, but exceptionally there may be some slight itching.

Pathology.—A keloid is composed of dense bands of fibrous tissue, that usually run parallel to the surface. The epithelium is flattened

and slightly thinned. The tumor mass is not vascular, although there are some vessels. Glands, hair follicles and muscles are pushed aside and are not contained within the body of the tumor. Those interested should read Heidingsfeld's paper.²

Diagnosis.—This is never a matter of difficulty.

Prognosis.—The growths do not absorb up spontaneously, and are very difficult to eradicate.

Treatment.—The treatment of keloid is notoriously unsatisfactory. After excision recurrence is usually prompt both along the line of the incision and in the needle holes. Even if no sutures are put in



Fig. 221.—Pedunculated keloid.

the wound and the edges are brought together with adhesive recurrence is practically sure to follow. The use of the cautery gives even worse results, the keloid being larger. Caustics or irritants always aggravate the condition. Hypodermic injections of thiosinamine are very unsatisfactory, often producing considerable pain and yielding doubtful benefits. Of late years the X-ray has been employed, and in some cases of flat growths has yielded excellent results. The dose must be pushed to the limit, using a hard filtered ray, in a few massive doses. The pedunculated keloids should be excised, and the resultant scar submitted to the rays.

² Heidingsfeld: Jour. Amer. Med. Assn., 1909, III, 1277.

DERMATITIS PAPILLARIS CAPILLITII.

Synonyms.—Aene keloid; keloidal sycosis; Sycosis frambœsiformis.

Definition.—Dermatitis papillaris capillitii is characterized by small keloidal growths at the mouths of the follicles at the back of the neck, the growths frequently containing a bead of pus.

Occurrence.—In the white race this condition is extremely rare, but in the negro it forms nearly one-half of one per cent of all dermatological cases.

Etiology.—There are undoubtedly two different groups of cases,



Fig. 222.—Early stage of dermatitis papillaris capillitii.

one starting as true keloidal growths, and the other as a sycosis that later becomes keloidal. It usually occurs in young adult males, especially those who have short thick necks, and who wear stiff collars. The friction of the collar edge is of undoubted importance in the causation of the trouble.

Symptomatology.—The eruption occurs at the back of the neck and in the lower portion of the back of the scalp, sometimes as a more or less linear band, and sometimes as an irregularly-shaped patch. The primary lesions consist of small hard papules situated around the bases of the hairs, frequently with pustular folliculitis

of slight extent. There is always considerable hair loss, especially between the papules. In size the papules vary from a sixteenth of an inch to nearly an inch in diameter, the largest being due to the coalescence of several smaller ones. They protrude considerably above the level of the skin as semiglobular swellings, and are very firm and hard. Many of them contain small pustules, and some may be surmounted by crusts. In rare instances the growths may extend up on the back of the head to a considerable distance. There are usually no subjective symptoms, but slight itching may be present.

Pathology.—The pathology has recently been investigated by Adamson,³ who found that the central parts of the lesion consisted of densely packed young connective tissue cells, with some collections of plasma cells, chiefly around the blood vessels. The abscess formation around the hair follicles appeared to be secondary.

Diagnosis.—Small hard growths around the hair follicles, often accompanied by collections of pus around the roots of the hairs, serve to differentiate this condition from acne or from sycosis.

Prognosis.—The condition does not clear up spontaneously, but usually progresses slowly.

Treatment.—The best treatment is by means of large measured doses of a hard filtered ray. If this is not available an ointment consisting of one dram of ammoniated mercury to an ounce of vaseline should be applied locally, and the hairs extracted from the infected follicles. In some instances excision is not followed by recurrence.

FIBROMA.

Synonyms.—Desmoid; Hard fibroma.

Definition.—A fibroma is a benign tumor, composed of connective tissue.

Occurrence.—True fibromas of the skin are rather rare tumors, even in the negro race.

Etiology.—The causation of these growths is absolutely unknown, although at times a number of small fibroid nodules of the arms may be associated with certain forms of chronic arthritis.

Symptomatology.—Fibromata are usually encountered in adults, and as single nodules. The multiple fibromata are really neuro-fibromata, except in the forms that accompany arthritis. True desmoids usually occur upon the abdomen, arising from the sheaths of the recti muscles. Fibromata of the tendon sheaths are also encountered at times. The growths are in almost all instances small,

³ Adamson: Brit. Jour. Dermat., 1914, xxvi, 69.

sharply circumscribed, hard nodules, and are round or oval in shape. They grow slowly and give no subjective symptoms.

Pathology.—Curiously enough the connective tissue of the corium is rarely the point of origin of these tumors, for they usually develop from tendon sheaths or from muscle sheaths.

Diagnosis.—Fibromata must be distinguished from fibro-sarcomata, sarcoids, wens, lipomas, keloids, myomas, neuromas and neurofibromas, and in many instances this can only be done by microscopical examination.

Prognosis.—These growths have no tendency to disappear spontaneously, in fact they not infrequently develop into sarcomas.

Treatment.—A fibroma should always be excised.

FIBROMA MOLLUSCUM.

Synonyms.—Neurofibroma; Molluseum simplex; von Recklinghausen's disease.

Definition.—Fibroma molluscum is a tumor derived from the sheath of a cutaneous nerve. The tumors are usually multiple and accompanied by other disturbances.

Occurrence.—The disease is distinctly rare.

Etiology.—The disease is stated to be more frequent in the far East than it is either in America or upon the continent. It sometimes occurs in several members of the same family or in successive generations. The disease usually begins in early life. The specific cause is unknown.

Symptomatology.—The disease usually becomes manifest in early life, but the symptoms increase as the patient ages. The subjects of this disease are somewhat below par mentally in many instances. In other cases the deformity may cause shyness and reticence that should not be mistaken for true retarded development. The tumors may be either single or multiple; in case they are single, they are apt to reach considerable size and to be pedunculated. In some instances there may be a large pendulous growth covering much of the scalp and a portion of the side of the face. The multiple growths may vary in number from eight or ten to many hundreds. They are usually most pronounced upon the body, and vary in size from a fraction of an inch to two inches in diameter. Some are distinctly embedded in the skin and some are pedunculated. The skin over the growths is normal. To palpation the growths feel rather soft and doughy. In some instances there are multiple areas of pigmentation, either small or large. While these growths are usually painless still in some instances they are very tender.

Pathology.—According to the investigations of von Recklinghausen* the vast majority of these tumors spring from the cutaneous

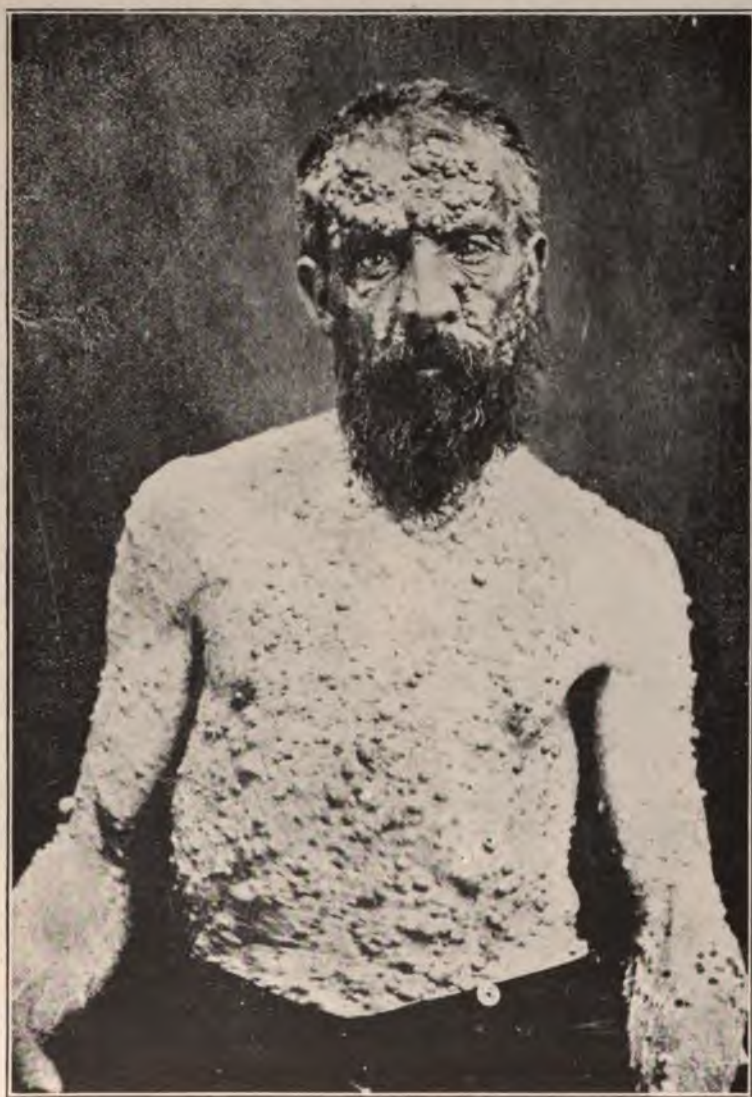


Fig. 223.—Fibroma molluscum. (After Ohmann-Dumesnil.)

nerves, hence are really neurofibromata. Crocker states that a sebaceous gland or hair follicle forms the center of many of the small

* von Recklinghausen: *Über die multiplen Fibrome der Haut, and ihre Beziehung zu den multiplen Neuromen*, Berlin, 1882.

neoplasms. The fibrous tissue is much hypertrophied and there are usually new fibroblasts between the connective tissue bundles.

Prognosis.—There is no tendency towards spontaneous recovery; in fact sarcomatous degeneration may take place in some of the growths.

Treatment.—Surgery alone is the only remedy upon which any reliance can be placed.

NEUROMA.

According to Heidingsfeld⁵ very few cases of neuroma cutis have been described in the literature. The tumors may be either single or multiple, and appear clinically as subcutaneous nodules that may be mistaken for either fibromas or myomas. Pressure upon these growths will usually give lancinating pains. The diagnosis can only be made by microscopical examination. Histologically the new growth of nerve tissue may be associated with that of muscle or endothelial tissue. Surgical intervention is the only means of cure.

MYOMA.

Myomas of the skin are very rare tumors, which have been carefully studied by Heidingsfeld.⁶ These growths may arise from the muscle tissue normally present in the walls of the vessels, in the arrector pili muscles or in the muscular attachments to the glands. Clinically they are subcutaneous single or multiple tumors that are apt to be painful on pressure. In some instances they are associated with cavernous dilatation of the blood vessels. They can be diagnosed with certainty only by microscopical examination. Surgical intervention is curative.

LIPOMA

Synonym.—Fatty tumor.

Definition.—A lipoma is a benign tumor consisting of fat tissue.

Occurrence.—Lipomas are probably the commonest benign neoplasms that are encountered in surgical clinics.

Etiology.—Lipomata are sometimes seen in children, but are commonest in young adults. The diffuse form is usually seen in men. The exact cause is unknown.

Symptomatology.—Lipomas may be single or multiple, but the former are much the commoner. The solitary lesions may be found

⁵ Heidingsfeld: Jour. Amer. Med. Assn., 1913, lxi, 405.

⁶ Heidingsfeld: Jour. Amer. Med. Assn., 1907, xlviii, 562.

in almost any portion of the body. They vary greatly in size, sometimes being very small and sometimes weighing several pounds. They are subcutaneous tumors that are definitely encapsulated, somewhat lobulated and of soft consistency. They grow slowly and never become malignant. There are no subjective symptoms.

The *diffuse lipomata* almost invariably affect the neck, and appear as multiple growths that are more or less confluent, and which gradually merge into the surrounding healthy tissue.

Adiposis dolorosa or *Dercum's disease*[†] occurs in women and is characterized by large, irregular fatty deposits in the subcutaneous tissues. As a terminal stage much of the body may be affected. In addition there is great muscular weakness, pain, and some disturb-



Fig. 224.—Diffuse lipomas of the neck, before operation. (Photographs by Dr. Walter van Sweringen.)



Fig. 225.—Same case as shown in Fig. 224, after operation by Dr. S. L. Carson of the Freedmen's Hospital.

ance of the local sensations. The skin is dry. Thyroid gland extract should be tried in these cases.

Pathology.—The tumor consists of masses of fat cells, that are separated by a fibrous tissue stroma.

Diagnosis.—The diagnosis can usually be made by the lobulation and soft consistency of the tumor. All other forms of subcutaneous growths must be excluded.

Prognosis.—A lipoma is in no ways dangerous to life, inasmuch

[†] Dercum: Amer. Jour. Med. Sc., 1892, civ, 521.

as it never becomes malignant, but it does not tend to disappear spontaneously.

Treatment.—The growths may be removed by surgical operation.

OSTEOMA.

True bony tumors of the skin must be differentiated from calcareous deposits which are the result of chronic inflammatory processes. Heidingsfeld^s has recently briefly reviewed some of these cases in addition to reporting one of his own. The growths probably arise from congenitally displaced bone cells. The growths are always small and usually occur in connection with other lesions. Histologically they show typical bone structure.

VASCULAR NÆVUS.

Synonyms.—Navus vasculosus; Hamangioma; Birth-mark; Mother's mark; Port-wine stain.

Definition.—A vascular navus is a congenital new growth and hypertrophy of the blood vessels of the skin.

Occurrence.—These growths are not at all common, comprising about three-tenths of one per cent of all dermatological affections.

Etiology.—They are usually congenital; only the small telangiectases are acquired. The trouble is more common in males than in females. Unna is inclined to believe that external pressure during intrauterine life may be the determining factor. He writes: "Virchow was the first to indicate a possible anatomic cause, namely a connection of the embryonic fissures of the skin, especially the brachial fissures, with the appearance of angiomata at their areas of predilection (eyelids, cheeks, ears, nose, lips), which he names the 'fissural angiomata;' and according to him, 'a very slight irritative condition at the border of these fissures, which are very abundantly supplied with vessels, is sufficient to induce a greater vascular development, which might possibly be recognized as a navus, but which remains latent, and which only later becomes manifest.'" Still others have thought that these growths were caused by some kind of nerve changes, inasmuch as they not infrequently develop along a nerve distribution.

Symptomatology.—Several groups must be recognized, first the small telangiectatic spots, second the flat navus, third the tumors containing spongy tissue that resembles erectile tissue and that protrude

^s Heidingsfeld: Arch. f. Dermat. u. Syphil., 1908, xcii, 337.

considerably above the level of the skin, and fourth the racemose aneurisms or blood vessel lakes.

The *telangiectases* are simply capillary nævi that are either congenital or acquired, and that may appear as small red spots or as a central spot from which small vessels ramify outwards. These growths may appear upon the face, or they may develop where there is a disturbance of the circulation, as upon the abdomen in cases of cirrhosis of the liver. They are rarely more than an inch in diameter, even when the ramifications are extensive, and give rise to no trouble, except in exceptional instances when they may bleed very freely following trauma.

The *flat nævi* are the commonest. They usually develop about the face or head, but may also occur upon the arms. In color they



Fig. 226.—Vascular nævus of face. (Collection of Dr. Richard L. Sutton.)

vary from a pale pink to a deep purple. As a rule these growths remain stationary throughout life and aside from the deformity they cause give rise to no other symptoms. In some instances there may be small protruberant masses of angiomatous tissue, that extend to some extent beyond the level of the skin, and which may grow considerably. It is exceptional for malignant change to develop in this type of neoplasm.

The *cavernous tumors* protrude considerably above the normal skin surface, and have a tendency to grow. In early life they are small, bright red growths that look somewhat like a strawberry. In later life they are much larger and darker in color. They give rise to grave deformity, and not infrequently become malignant.

The fourth class almost come in the group of *racemose aneurisms*,

for they consist of enormously dilated blood vessels, usually veins, which may be superficial or which may be deep beneath the surface. In color they vary from a pale to a deep blue, are soft doughy growths that distinctly fluctuate and that have rather indefinite outlines. They are usually situated over a suture, and protrude to some extent above the surface. At times there may be a number of small dilated vessels in the overlying skin.

Pathology.—The first two groups consist of dilated capillaries, at times with a slight overgrowth of endothelial tissue, and with connective tissue separating the vessels. The second group consists of dilated venules so that the appearance is that of erectile tissue. The last group consists of enormously dilated veins, forming a blood lake at it were.

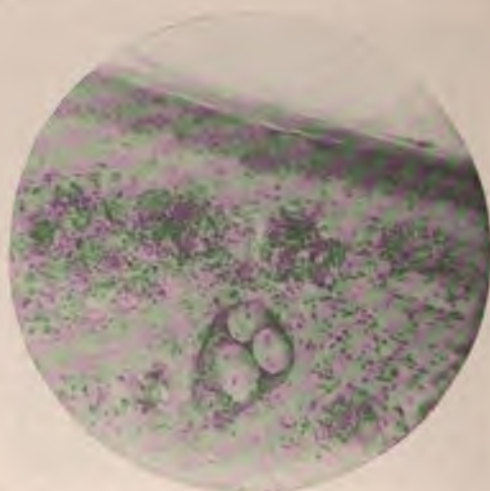


Fig. 227.—Low power photomicrograph of a capillary telangiectasis.

Diagnosis.—The diagnosis is very easy, for the history of a congenital growth combined with vascularity practically makes the diagnosis certain. An acquired telangiectasis is no more difficult to recognize.

Prognosis.—The telangiectatic spots may grow slightly, but as a general rule reach their full development at an early date. The flat capillary naevi do not grow, neither do they become malignant, save in exceptional instances. The fungating angiomata are apt to grow to be large tumors, and they may also become malignant. The last group or blood lakes may also become much larger, but rarely become malignant.

Treatment.—If the *telangiectases* are not in a prominent position

there is no reason for removing them. When they are upon the face or arms they are best removed by means of the carbon dioxide snow, making firm pressure for about twenty to thirty seconds.

The *pale flat nævi* are much better left untreated. Probably the most satisfactory method of treatment of the dark growths is by means of the Kromayer lamp, which at times gives excellent results. Radium acts by producing scar tissue, and does not give as good results as the method just mentioned. Neither the X-ray nor carbon dioxide snow are to be advocated except in the very small growths.

The *large fungating tumors* can be treated by either carbon dioxide snow or the actual cautery, or by a combination of the two methods, either of which is much better than the injection of boiling water, or scarification with a cautery.

The *blood lakes* are best treated by ligating all blood vessels that enter or leave them. Where very superficial good results can also be obtained by the use of carbon dioxide snow, making deep pressure for from two to three minutes.

Vascular Nævi in the Negro are distinctly rare. I remember having seen only one flat birth-mark of the face and one of the wrist, both in mulattoes. Telangiectases and blood lakes are also rare, while the large cavernous growths are encountered very seldom.

ANGIOMA SERPIGINOSUM.

This malady, also called infective angioma or nævus lupus, is a very rare one, which has recently been most carefully described by Wise.⁹ The disease is most frequently encountered in females under ten years of age. It may arise *de novo* or from a vascular nævus. There are a number of different types of lesion: (1) closely grouped minute punctæ; (2) nævoid-looking lesions; (3) ringed, gyrate or annular lesions; (4) retiform lesions; (5) a mixture of all types. The course of the disease is very slow. There are no subjective symptoms. Pathologically there are a number of newly formed capillaries with some perivascular infiltration, and considerable intercellular and intracellular œdema. Cauterization along the edge of the growing lesions should be tried in order to prevent their spread, but so far even this has proven of doubtful value.

LYMPHANGIOMA.

As Stelwagon points out the subject of lymphangioma is still a rather confused one, inasmuch as no hard and fast dividing line has been drawn between actual new growths and lymphangiectases.

⁹ Wise: Jour. Cutan. Dis., 1913, xxxi, 725, 916.

Lymphangiectases may be observed in either the superficial or deep lymphatics. The superficial form appears as minute or slightly larger vesicles which, when ruptured, give a discharge of lymph. The deep variety is usually secondary to some inflammatory process and can be recognized only as a corded growth beneath the skin.

Simple lymphangioma occur as circumscribed, slightly elevated tumors, consisting of enlarged lymphatics. The forms best known are in the tongue and lip, the former being known as *macroglossia* and the latter as *macrochelia*.

Lymph cysts are deep cystic tumors that come under the domain of surgery.

Lymphangiomata may be the seat of a latter sarcoma, so should always be removed surgically whenever possible.

LYMPHANGIOMA CIRCUMSCRIPTUM.

Synonyms.—*Lymphangioma cavernosum*; *Lupus lymphaticus*; *Lymphangiectodes*; *Lymphangioma simplex*.

Occurrence.—The disease is very rare.

Definition.—*Lymphangioma* is a hypertrophy and new growth of lymph capillaries, characterized by circumscribed, elevated, crowded vesicles filled with lymph.

Etiology.—The disease usually begins in early life, so may be due to a congenital defect.

Symptomatology.—As a general rule there is but one patch, but there may be two or three, and these usually occur upon the limbs, neck or upper part of the body. The patches are composed of thick-set vesicles, that are usually covered by normal or by hypertrophied skin, and that present a yellowish or grayish color. The vesicles are often capped with dilated venules. The vesicles are firm and not easily ruptured, but when rupture does occur lymph escapes.

Pathology.—The pathology has been studied by various men including Gilchrist.¹⁰ The changes are in the papillary and subpapillary portions of the epidermis, and consist of dilated and hypertrophied lymphatics. There are some collections of mononuclear cells in the corium.

Diagnosis.—The disease is characteristic, and once seen is easily recognized in the future.

Prognosis.—There is practically no tendency for spontaneous cure to take place, in fact the lesions usually grow slowly. It is more than possible that certain of these cases eventually become sarcomatous.

¹⁰ Gilchrist: Bull. Johns Hopkins Hosp., 1896, 138.

Treatment.—These growths should be removed by excision, preferably with the cautery.

SARCOID.

Synonyms.—Multiple benign sarcoid; Sarcoid tumor; Miliary lupoid; Benign miliary lupoid.

According to the excellent paper of George Henry Fox and Wile¹¹ there are four types of sarcoid: (1) the multiple benign sarcoid of Boeck; (2) the subcutaneous sarcoid of Darier-Roussy; (3) the erythema induratum-like sarcoid of the extremities; (4) the Spiegler-Fendt sarcoid.

The *Boeck type* of sarcoid usually occurs upon the face, shoulders, back or extensor surfaces of the arms. There may be one or two large nodules, numerous papules or an infiltrated plaque. The tumors are firm and not at all elastic, reddish in color, and have peripheral dilated venules. The course of the disease is essentially chronic, resolution eventually occurring. Section show sharply circumscribed deep-seated nodules which fill the perivascular lymph spaces, and which are separated one from the other by connective tissue. The cells are epithelioid, but at the edges there are small mononuclears, plasma cells, and an occasional giant cell. There is no caseation necrosis.

The *Darier-Roussy type* is very rare and occurs in the form of round nodules that may reach an inch in diameter. They occur especially upon the upper portion of the trunk. Histologically the nodules are composed of epithelioid and giant cells, with some small mononuclears.

The third group comprises growths that occur chiefly in adult women and they are usually seated upon the extensor surfaces of the arms or legs. The growths occur as subcutaneous infiltrations or nodules that closely resemble *erythema induratum*. Ulceration may exceptionally occur.

The *Spiegler-Fendt type* comprise a number of different growths, some of which are clinically benign and some of which are malignant. This group undoubtedly fades off into the type of malignant sarcoma that has been described by Polland and others. Clinically these tumors are of a purplish red color and lie deep in the cutis. Histologically there are more or less circumscribed aggregations of small round cells, with but a few giant and epithelioid cells.

Etiology.—The etiology of these growths is not settled. On the

¹¹ Fox and Wile: Jour. Cutan. Dis., 1911, xxix, 375.

one hand they have undoubted relationship to nodular tuberculosis, and on the other hand to mild forms of sarcoma cutis.

Treatment.—Many of the cases can be cured by pushing arsenic. The Röntgen rays may also be helpful.

LYMPHOMA.

A lymphoma is a benign tumor that consists of a new formation of lymphoid cells. Such growths are undoubtedly very rare, but Winfield¹² has recently reported an instance where a woman had a number of nodules on the face that upon histological examination were found to consist of lymphoid tissue. It is more than possible that there has been some confusion in the literature and that certain benign sarcomata and possibly some of the cases reported as sarcoids were in reality examples of this rare affection. In view of the fact that certain of them were much helped by arsenic this would seem especially plausible. The subject undoubtedly needs more investigation.

¹² Winfield: Jour. Cutan. Dis., 1913, xxxi, 245.

CHAPTER XXX.

MALIGNANT TUMORS—NOT OF EPITHELIAL ORIGIN.

MULTIPLE HEMORRHAGIC SARCOMA.

Synonyms.—Kaposi's sarcoma; Multiple pigmented sarcoma.

Definition.—Multiple hemorrhagic sarcoma is a malignant condition characterized by the presence of multiple reddish tumors that first appear upon the extremities, and that develop rather slowly, often without forming metastases until very late.

Occurrence.—The growths are distinctly rare. The majority of patients are males, usually Hebrews, past forty years of age.

Etiology.—The etiology is absolutely unknown.

Symptomatology.—The disease usually begins with the appearance of numerous small nodules upon the extremities, the lesions being either discrete or conglomerate. The color varies from a reddish-blue to a purple. From time to time new tumors appear, while some of the older ones involute. Eventually growths appear in the mucous membranes of the intestinal tract, and the patient dies in from two to twenty years.

Pathology.—Hartzell's¹ investigations and review of the literature would seem to indicate that the growth is a spindle-celled sarcoma, that shows both hypertrophy and new growth of the capillaries. This growth is situated in the corium.

Diagnosis.—This condition must be diagnosed from multiple sarcomas, and from the more malignant types of sarcoma. It is more than possible that an eczema might simulate it for a time, while erythema induratum would give trouble if it did not ulcerate.

Prognosis.—The prognosis is undoubtedly grave, inasmuch as nearly all of the recorded cases have died.

Treatment.—Arsenic is worthy of a trial, although of doubtful value in the true cases. The Röntgen rays may give much aid for a time at least.

SARCOMA.

Synonyms.—Sarcoma cutis; Sarcomatosis cutis.

Definition.—A sarcoma of the skin is a malignant neoplasm of the skin, derived from the connective tissue cells, and characterized by local tumor formation and metastatic growths.

¹ Hartzell: Jour. Cutan. Dis., 1908, xxvi, 97.

Occurrence.—Sarcoma of the skin is a rather rare disease. Only about one case of sarcoma is seen to every fifty cases of cancer.

Etiology.—The etiology of sarcoma is shrouded in the same mystery that involves the etiology of carcinoma. Rous and Murphy have shown that certain cases of fowl sarcoma may be transmitted by the filtrates through a Berkfeld filter. The most important practical point is the observation that sarcoma never originates in healthy skin, but that it arises from some pre-existing lesion, such a scar, naevus or lymphangioma, or from a fibrous growth. Bloodgood has told me that every case of which he has notes has originated in one of these ways.

Symptomatology.—The classification or the sarcomata is most unsatisfactory. Nearly every author has used a different classification. Especially confusing are the references to angiosarcoma. As Adami points out every sarcoma has a great tendency to grow around the walls of capillaries so that there is only an endothelial lining between the lumen and malignant cell growth. In view of this fact I am inclined to believe that it would be better if the expression *angiosarcoma* were dropped from the literature, or at least reserved for the fairly typical perithelialhamangiosarcomata. From a pathological standpoint there are large and small spindle-celled sarcomas, large and small round-celled sarcomas, mixed-celled, giant-celled and alveolar sarcomas. The resulting growths may be either single or they may be multiple growths in the skin, sarcomatosis cutis. As a result of the way in which the sarcomata invade the walls of the blood vessels metastases usually take place through the blood stream, although they may also do so throughout the lymphatics.

The *fibrosarcoma* is a connecting link between the fibroma and the spindle-celled sarcoma. It usually arises from pre-existing abnormal fibrous tissue, such as a scar, or from a fibrous tumor of some kind. Such a neoplasm is usually single, may arise upon any portion of the body, and does not metastasize until comparatively late. The growth is a reddish tumor that soon bulges above the skin, and that may not ulcerate for a considerable period.

The *spindle-celled sarcoma* (oat-shaped-celled sarcoma of Adami) is likewise usually solitary and arises from a pre-existing fibroid abnormality. As a rule these growths do not metastasize for some little time, so if they are seen early they are curable by local operation alone. Ulceration is sometimes early, but not always so.

The *round-celled sarcoma*, especially if of the small-celled type, is extremely malignant. Both ulceration and metastases occur early. Like the other sarcomas this variety arises from some abnormality, and not *de novo*. These growths may be single or they may be mul-

tiple. In some instances there may be hundreds of them scattered throughout the skin, with apparently very little invasion of the viscera, which however always follow. The tumors are pinkish in color, and if solitary soon grow to a large size. The multiple ones rarely be-



Fig. 228.—Multiple sarcomas of the skin. (Collection of Dr. Charles J. White.)

come more than two inches in diameter. The large round-celled sarcoma does not run as rapidly fatal a course as does the small-celled growth.

The *giant-celled sarcomas* are very rare in the skin. Nevertheless

one or two instances of sarcomatosis from this type have been recorded.

Pathology.—As already indicated, there is considerable confusion concerning the pathology of the cutaneous sarcomata, the angiosarcomata causing much of the confusion. We are fairly sure of certain types: namely, the fibrosarcoma; the small and large spindle-celled growths; the small and large round-celled neoplasms; the alveolar sarcomata; the giant-celled sarcoma, which must not be confused with the giant-celled sarcoma of bone (myeloma); and various types of mixed-celled tumors. All sarcomas consist of a rich growth of sarcoma cells with a fibrous tissue matrix. In the alveolar growths the cells tend to lie loose in the center of the alveoli and not to invade



Fig. 229.—Low power photomicrograph of histopathology of a small round-celled sarcoma of the skin.

peripherally. All types of sarcoma cells seem to have a special affinity for the walls of the blood vessels, often growing in next to the intima and frequently invading it. The richer the growth is in cells the more malignant it is.

Diagnosis.—The diagnosis of sarcoma is usually not especially difficult. The growth commences in a presarcomatous lesion of the skin, that is, in a scar, in a fibroma or in a naevus, forming a tumor mass that soon ulcerates and that lacks the stony hard edge of a carcinoma. In the multiple cases it may be extremely difficult to differentiate mycosis fungoides or certain of the cases of multiple sarcoid. However, as a rule mycosis fungoides has shown certain very definite premycotic lesions, and sarcoids usually grow very slowly and are

clinically benign. A piece of tumor should never be excised for diagnosis, as this is apt to favor dissemination. The whole growth should be excised, and the diagnosis made from that.

Prognosis.—The prognosis of sarcoma of the skin is extremely bad, probably because it is almost impossible to see the cases early in the stage of malignant development. Probably ninety per cent of all cases die from metastases, although education of the public and of the physicians should greatly lower this mortality.

Treatment.—Prevention is very important. Any fibroid growth that is the subject of irritation should certainly be removed; in fact it is wiser to remove practically all of them whether they are subject to trauma or not. The operation can do no harm.

A sarcoma should always be excised just as soon as suspected. Not only should the growth itself be removed, but also the underlying fat and fascia. If the growth occurs upon the arm or leg it is questionable if it is justifiable to amputate, for this will not stop a metastatic growth that has occurred through the lymphatics. It is also questionable if the neighboring glands should be removed, inasmuch as they are rarely the seat of involvement. Nevertheless in certain instances secondary growths do take place in them and in them alone, so it might be just as well to excise them.

A bibliography of the subject may be found in my monograph upon "Cancer of the Skin."

MYCOSIS FUNGOIDES.

Synonyms.—Granuloma fungoides; Granuloma sarcomatodes; Sarcomatosis generalis.

Definition.—Mycosis fungoides is a lethal affection of unknown etiology, characterized at first by the formation of eczematoid patches upon which tumors later develop.

Occurrence.—The disease is rare, constituting about three-hundredths of one per cent of all cutaneous disorders. It seems to be especially infrequent in the negro, although three cases have now been recorded.

Etiology.—The exact causation of the disease is still unknown. It has been thought to be a granuloma, a form of sarcoma and a form of lymphoma, related to leukemia and allied conditions. After a careful investigation of the literature Strobel and I² came to the conclusion that the latter was the only tenable theory.

Symptomatology.—In the vast majority of cases the malady

² Strobel and Hazen: Jour. Cutan. Dis., 1911, xxix, 147.

starts in with patches that may resemble either eczema, psoriasis or a chronic erythema, but which usually itch intensely. After an interval that may vary from two months to several or even many years tumors develop upon these patches, gradually increase in size, and eventually ulcerate. Some of the premycotic patches clear up spontaneously. In certain instances there may be no early lesions but the tumors develop abruptly (*tumeurs d'emblée*). In still other instances the lymph glands may be much swollen in connection with the process. In a number of instances at autopsy secondary growths have been found in the interior of the body, usually at the site of lymph glands. The disease always ends fatally, the duration being from one to five years after the appearance of the neoplasma.

Pathology.—The premycotic lesions show a characteristic deposit of small round cells in the subpapillary portion of the corium. The older growths show either the same type of cell or plasma cells arranged in alveoli, that are separated by fibrous tissue stromata. Many of these cells are rich in mitotic figures. There is frequently a leucocytosis, both the large mononuclears and the eosinophiles being often increased abnormally. In a few cases the blood picture has been typical of leukæmia. In a number of instances the bone marrow has been abnormal, and the internal lymph glands may reach a large size, constituting some of the so-called metastases.

Diagnosis.—In a well-established case the diagnosis is easy, the combination of premycotic lesions with later tumor development and ulceration being characteristic. Leprosy might cause trouble, but the failure to find the *lepra bacillus* is distinctive. Also there are no sensory disturbances and no nerve thickenings. Sarcoma is difficult to distinguish from the cases that show no early lesions, and can be done only by biopsy. The premycotic lesions must be distinguished from eczema, psoriasis and a persistent erythema multiforme. As a rule there are numerous lesions, that tend to have an annular or serpiginous configuration and that itch intensely. A biopsy will always serve to clear the question.

Prognosis.—The prognosis is very bad: all of the cases have died. Still much may be done to delay a fatal termination and to render the patient more comfortable.

Treatment.—Large doses of arsenic may be of some aid. The best form of treatment is exposure to comparatively small doses of the Röntgen ray, never using more than 2 Holzkmeeht units. The X-ray will often clear up all of the lesions in a most surprising fashion, in addition to giving much comfort from the pruritus. Antipruritic ointments should also be administered.

LYMPHODERMIA PERNICIOSA.

Lymphoderma pernicioso apparently forms a connecting link between mycosis fungoides and the leukæmias. The disease is characterized by an exfoliating erythrodermia that itches intensely, enlargement of the lymphatic glands and a high leucocyte count, with a relative increase in the mononuclears. The disease ends fatally within a year or two.

LEUKEMIA CUTIS.³

Leukæmia, whether acute or chronic, especially the lymphatic variety, is quite frequently associated with various skin manifestations. There may be simple pigmentation, or there may be purpura, a generalized vesicular eruption, papules, a diffuse infiltration, or the formation of nodules or of actual tumors. The tumors tend to choose the face as their site of predilection. The diagnosis can be made by examining the blood, always remembering that leukæmia may show alukæmic periods. The treatment is that of the underlying condition.

ENDOTHELIOMA.

Endothelioma of the skin is a very rare affection. It may arise from either the blood or lymph vessels, and be characterized by either pedunculated or deep-seated tumors, that are prone to recur after removal, but that rarely metastasize until late. The diagnosis can be made with certainty only by microscopical examination. Treatment should consist of broad local removal. The so-called endothelioma capitis or one of the varieties of lobulated turban tumors is now believed to be a carcinoma of the basal-celled variety, in the majority of instances at least. For the bibliography my book on Skin Cancer may be consulted.

³ Hazen: Jour. Cutan. Dis., 1911, xxix, 521.

Arndt: Jour. Amer. Med. Assn., 1914, lxiii, 1268.

CHAPTER XXXI.

DISEASES OF THE MUCOUS MEMBRANES OF UNKNOWN ETIOLOGY.

A number of cutaneous diseases that have already been described have lesions upon the mucous membranes. Among these may be mentioned syphilis, leprosy, tuberculosis, erythema multiforme, urticaria, lichen planus, pemphigus, impetigo contagiosa, lupus erythematosus, pellagra, herpes, chicken-pox, and various of the new growths. However there are a number of diseases that affect these parts alone and that are common enough to merit description.

LEUKOPLAKIA.

Synonyms.—Leukoplakia buccalis; Leukeratosi buccalis; Leukoma; Leukoplasia; Ichthyosis linguæ; Tylosis linguæ; Psoriasis linguæ; Smoker's patches.

Definition.—Leukoplakia is a disease of the mucous membranes of the mouth, often but not necessarily of syphilitic origin, and characterized by superficial white patches.

Occurrence.—The disease is rather uncommon, but by no means a rarity. Out of my last six thousand cases I have seen but ten of leukoplakia.

Etiology.—Leukoplakia is much rarer in women than in men, and seems to be less common in negroes than in whites. All of my cases occurred in undoubted syphilitics, but Stelwagon states that it frequently develops in the non-syphilitic. It certainly bears no relationship to psoriasis. It is probable that excessive smoking, alcohol and highly seasoned foods favor its development.

Symptomatology.—The disease usually affects the dorsum of the tongue, but may involve either the lips or the buccal mucous membranes. The first evidence is usually an inflammatory patch that may be slightly sensitive. This soon develops into a rounded or irregular area that is white or bluish-white in color and often surrounded by an inflammatory areola. The involved mucous membrane is a trifle thicker than normal, and there is often some slight exfoliation. There may be but one small patch at first, later on other patches form, and eventually much of the dorsal surface is affected. In the advanced cases the surface is thickened, rough and desquamating, and there is a tendency for cracks and fissures to form. The affected area is stiff

and inelastic. Eventually the cracks are apt to change into deep fissures that become indurated, and cancer of the tongue develops.

Pathology.—Sections show keratosis with marked thickening of the superficial layers, the downgrowths of the rete are deeper and wider than usual, and there are marked evidences of chronic inflammation in the upper part of the corium. Both pathologically as well as clinically the condition must be considered as a precancerous dermatosis.

Diagnosis.—In the advanced cases the diagnosis is not difficult, there is no condition which resembles it. The early cases should be recognized by the slight thickening and the whitish color.

Prognosis.—In early stages the prognosis is good, if the patient will obey instructions, but in the advanced instances the probability of cancerous changes must always be borne in mind.

Treatment.—In the early cases smoking and the eating of very hot or spiced food should be prohibited. The teeth should be attended to and the presence of syphilis confirmed or excluded. The use of mild caustics, as advised in many of the books, is to be deplored. The patch should either not be irritated at all, or else radically removed by means of the cautery. Antisyphilitic remedies, even the much vaunted salvarsan, have very little effect. In the late cases there should be complete removal with the cautery.

TRANSITORY BENIGN PLAQUES OF THE TONGUE.

Synonyms.—Pityriasis linguæ; Erythema migrans; Wandering rash; Exfoliatio arcata linguæ; Circinate eruption of the tongue.

Definition.—This is an unusual disease, of unknown etiology, characterized by the presence of slightly inflammatory areas that change in configuration from day to day.

Occurrence.—The disease is unusual: in my last six thousand cases I have encountered the disease but seven times.

Etiology.—The affection is more apt to be present in the young, either children or young adults. The etiology is absolutely unknown; it is in no way related to syphilis.

Symptomatology.—The disease usually affects the tip and lateral dorsal aspects of the tongue. There are from one to ten small, oval or roundish, sharply circumscribed, grayish, glossy patches, that look as though they had been denuded of surface epithelium. The patches spread peripherally, and often become confluent. A patch disappears spontaneously in from two to ten days. There may be intervals of days when the tongue is entirely clear, but the manifestations will later present themselves.

Pathology.—The changes are stated to be chiefly in the horny layer.

Prognosis.—The immediate prognosis is not good, for the disease



Fig. 230.—Transitory benign plaques of tongue. (Gilchrist's case.)

usually persists; the ultimate prognosis is good, for the condition does not become malignant, and as a general rule it tends to clear up with advancing age.



Fig. 231.—Same case as shown in Fig. 230 four days later. (Gilchrist's case.)

Treatment.—The treatment is most unsatisfactory: there is no specific remedy. Arsenic has been advocated, but is of doubtful value. The digestion should be studied, and corrected if found faulty.

FURROWED TONGUE.

Synonyms.—Grooved tongue; Scrotal tongue; Ribbed tongue.

This condition runs in certain families, and manifests itself by a deepening of the central furrow, with radiating furrows. In its milder forms this anomaly is not rare, but must not be mistaken for the cobblestone tongue of syphilis or for macrochelia. It is important that the furrows be kept clean as irritation might lead to the development of cancer.

BLACK TONGUE.

Synonyms.—Hairy tongue; Hyperkeratosis linguae.

This curious affection has recently been carefully studied by Heidingsfeld.¹ The "hairs" consist of elongated filiform papillae, due to a hyperkeratosis, and having a black, or rarely a yellow or blue color. The center of the tongue is usually affected. The malady usually lasts a number of months and then disappears. The cause is unknown. Treatment is unsatisfactory, inasmuch as the growth usually recurs after peeling or cauterization. It could undoubtedly be cured by means of the actual cautery, but this is hardly necessary, inasmuch as the disease occasions no trouble, and eventually disappears of its own accord.

FORDYCE'S DISEASE.

This disease, first described by Fordyce² in 1896, is characterized by the presence of enlarged sebaceous glands and outlets upon the lips, buccal mucous membranes or gums. The general appearance is that of very numerous milium-like bodies seated in the mucous membranes. The condition is not especially rare, but inasmuch as it rarely gives rise to any trouble, the disease is only infrequently recognized. There may be a slight feeling of burning as though the parts had been painted with silver nitrate. White³ has recently described the condition very carefully. Treatment is unsatisfactory, although Sutton⁴ states that freezing with carbon dioxide snow may help some of the cases.

CHEILITIS GLANDULARIS.

Synonym.—Cheilitis glandularis apostematosa.

This rare malady was first described by Volkmann⁵ in 1870. There

¹ Heidingsfeld: Jour. Amer. Med. Assn., Dec. 17, 1910, 2117.

² Fordyce: Jour. Cutan. Dis., 1896, 413.

³ White: Jour. Cutan. Dis., 1905, xxiii, 97.

⁴ Sutton: Internat. Clinics, 1914, 24th Ser., No. 3, 123.

⁵ Volkmann: Virchow's Arch., 1870, I, 142.

is a chronic inflammation and some enlargement of the lower lip, with enormously enlarged follicular mouths, from which mucous exudes to such an extent that in the morning the lip is covered. Sutton's⁶ histological studies showed that there is an adenomatous condition of the sebaceous glands with great dilatation of the mouths. Sutton considers that X-ray treatment is the most promising.

CHEILITIS EXFOLIATIVA.⁷

Synonyms.—Pityriasis of the lips; Exfoliating eczema of the lips.

This rather unusual condition is characterized by corneus flakes of the lip, which peel off from time to time, the scales speedily returning. The condition is persistent. Pathologically it is characterized by chronic inflammation with hyperkeratosis and some acanthosis. Radical cure is very difficult to obtain. The condition can be ameliorated by the use of mild ointments, or by an occasional painting with trichloroacetic or lactic acid. The Röntgen rays may aid. Carcinoma has known to follow this condition.

⁶ Sutton: Jour. Cutan. Dis., 1909, xxvii, 151.

⁷ Stelwagon: Jour. Cutan. Dis., 1900, xviii, 268; 1904, xxii, 351.

CHAPTER XXXII.

DISEASES OF THE NAILS OF UNKNOWN ETIOLOGY.

Many of the diseases already considered give rise to changes in the nails or in the nail bed. Eczema, psoriasis, syphilis and ringworm are probably the commonest of these. In the majority of instances the bed is chiefly affected with the formation of a crust which lifts up the nail substance, and causes more or less marked changes in it. Heller's *die Krankheiten der Nägel* published in 1900 still remains the best book on the subject.



Fig. 232.—Atrophy of the nails.

ATROPHY OF THE NAILS.

Atrophy of the nails, or onychatrophia, is a symptomatic condition, due to either a general or local condition that precludes the complete formation of the horny substance. The nails may be changed in size, shape, thickness, color or elasticity. They may be thin and expanded, or they may be thin and contracted; abnormally brittle or soft; transversed by ridges or furrows; they may be split or look as though they had been gnawed; they are usually lustreless, but the color may vary

greatly. In some instances this condition may be due to a local infection with either the ringworm fungus or with the staphylococcus, or to psoriasis or eczema. Such a cause should always be ruled out. In these instances treatment should consist in paring away as much of the nail as is possible and in applying various antiseptic ointments or solutions to the nail bed.

WHITE SPOTS.

White spots of the nails, or leukonychia, may occur as universal whiteness of the all of the nails, or more commonly in the form of small bars or dots upon one or two nails. The cause is not definitely known, but by some is believed to be due to air entering between the lamellæ, possibly gaining this position through trauma. However Heidingsfeld¹ cannot accept this view, believing that it is due to improper keratinization. Nails thus affected should not have the manicure knife used upon them.

HYPERTROPHY OF THE NAILS.

Hypertrophy of the nails (*onychauxis*, *onychogryphosis*) may be either an idiopathic or symptomatic affection. The nails may be increased in length, breadth or thickness, and changed in shape, texture or color. The commonest changes are those associated with changes in the circulation, almost any malady of the heart or kidneys frequently giving rise to distortions of the nails.

The "egg-shell nail" originally described by Hyde is usually seen in young women of poor general health or in gouty men. The nails of both hands and feet are usually involved, being thin, and the lateral and free edges tending to grow up and away from the nail-bed. This free portion is abnormally white in color: there is usually an associated hyperidrosis.

Tylosis of the matrix (Crocker), *onychauxis with keratoma* and *hyperidrosis* (Hyde) is apparently a more pronounced condition of the "egg-shell nail" that has just been described. The subungual space is choked with a granular material (which in some other instances may resemble that due to the invasion with the ringworm fungus or to the staphylococcus, or to psoriasis). There may be an associated keratosis of the palm or sole. Hyde states: "All of these conditions (excluding the infectious ones) are expressions of an effort on the part of the skin of the hand and foot, and of the nails of these organs as well, to protect a constantly moistened, and therefore

¹ Heidingsfeld: Jour. Cutan. Dis., 1900, 490.

abnormally vulnerable surface, from the effects of maceration. These processes operate under the impulse of the law of compensation which produces hypertrophy of the heart in an effort to overcome resistance in certain valvular diseases of that organ. All these patients have damp, often excessively wet feet and hands. In all, the keratomatous modifications of both matrix of nail and epiderm of palm and sole is



Fig. 233.—Hypertrophy of the nails.

an effort towards protection of unduly vulnerable because abnormally macerated tissue." However there may be hypertrophy of the nail that is not associated with hyperidrosis and in which the nail may undergo extreme hypertrophy, sometimes curling up on itself.

CHAPTER XXXIII.

DISEASES OF THE HAIR OF UNKNOWN ETIOLOGY.

CANITIES.

Synonyms.—*Trichonosis cana*; Whiteness of the hair.

Definition.—Canities is a fading of the natural pigment in the hair so that a white color results.

Occurrence.—Everyone who lives to a sufficient age, and who does not become totally bald, has white hair.

Etiology.—In some instances the condition is congenital, but is usually acquired as the result of age. Senile whiteness and most cases of the presenile form result from an obscure change in the nutrition of the hair papilla, thus interfering with the production of pigment. The various theories are fully described by Jackson and McMurtry. In some instances grayness seems to be due to neuralgia. There is still much debate as to whether or not hair can ever turn white in the course of a few days or hours; the majority of men believing that it may do so in very exceptional instances.

Symptomatology.—Usually the hairs do not begin to turn until the individual is past thirty-five years of age; if they turn before that the condition is spoken of as premature or presenile canities. It is exceptional for any one to reach the age of fifty without having some gray hairs. As a general rule, the hairs upon the temples first become white, then those of the vertex and finally those upon the scalp. Sometimes the beard is the first to whiten, but most commonly it does so some years after the scalp hairs have lost their color. The pubic and axillary hairs are the last to turn, and may never lose their pigment. In very exceptional instances the white hair may again regain its normal color. The texture of the hair is rarely changed, but sometimes becomes dryer than normal, and may be stiffer and coarser. The change in color begins at the root, and first is gray and not pure white because of the small amount of pigment present. As the pigment lessens the color becomes whiter and whiter.

Special Forms.—Ringed hair is a rare variety in which there are alternate rings, one ring being the normal color and the next ring white. In some of the instances the white color is due to bubbles of air.

Pathology.—There is simply an absence of pigment in the hair.

Diagnosis.—The diagnosis is easy, but it must be remembered that the hairs growing upon a patch of leucoderma may be white.

Treatment.—Nothing can be done to restore the color of the hair permanently. In exceptional instances where neuralgia has apparently been the causative factor the cure of this ailment may be followed by the restoration of the hair to its normal color.

In many instances hair dyes are used. The proprietary preparations should always be avoided inasmuch as most of them contain either lead or cyanide of potassium. Jackson and McMurtry¹ give formulas for a number of hair dyes, and the reader is referred to their book for further details.

ALOPECIA.

Synonyms.—Atrichia; Calvities; Loss of hair; Baldness.

Definition.—Alopecia is an abnormal loss of hair, due to either local or general disorders, which usually affects the scalp but which may involve any portion of the body.

Occurrence.—Alopecia is an extremely common affection, inasmuch as it not only follows almost any systemic disturbance, but also most of the seborrheic conditions.

Etiology.—Schamberg gives a scheme for the classification of the alopecias upon an etiological basis which, while not elaborate, still meets the requirements of the student or physician.

- I. Congenital alopecia.
- II. Senile alopecia.
- III. Premature alopecia.
 - (a) Idiopathic. Hereditary predisposition.
 - (b) Symptomatic.
 - (1) Local diseases.
 - Seborrhœa.
 - Seborrheic dermatitis.
 - Psoriasis.
 - Erysipelas.
 - Lupus erythematosus.
 - Syphilodermata.
 - Folliculitis.
 - Tinea tonsurans.
 - Tinea favosa, etc.
 - (2) General diseases.
 - Acute.
 - Typhoid fever.
 - Variola.
 - Scarlatina.
 - Pregnancy, etc.

¹ Jackson and McMurtry: Diseases of the Hair, 1912.

Chronic.

Syphilis.
Leprosy.
Myxedema.
Neurasthenia.
Chronic intoxications.
Anemia.
Diabetes.
Cancer.
Gout.
Phthisis, etc.

In addition there is a form that is due to continued local trauma, as occasioned by peculiar modes of hair dressing, etc.

The loss of hair is due to either a destruction of the follicles, to a disturbance of nutrition, or to a toxin in the blood. The majority of the local diseases eventually cause an atrophy of the follicles; in the acute infections there is a circulating toxin, while in the chronic diseases there is probably a disturbed supply of nutritive elements.

Symptomatology.—*Congenital alopecia* and alopecia due to the various local diseases have already been described, so will not be mentioned here.

Senile alopecia is the form of baldness which accompanies old age. The hair first becomes white, then loses its lustre and then begins to drop, either slowly or rapidly. The fall usually begins at the vortex, but may begin on the forehead. In most instances the lateral and posterior aspects of the scalp are spared. The scalp is smooth, thinned and glistening. Senile alopecia may affect the hairs of both the beard and pubis. Women are far less frequently bald than are men.

Idiopathic premature baldness is that form which begins before middle age, and for which no local or general cause can be found. As a general rule it is found that this condition exists in many of the males of the family, and that it does not manifest itself until the individual is at least twenty-five years of age. Usually the fall begins over the temples and then over the forehead, so that the forehead looks abnormally high. However in many instances it begins at the vertex. It is not preceded by whitening of the hair. The theories as to the causation are well described by Jackson and McMurtry.

In the *symptomatic form* there is always a diffuse thinning, or more rarely a patchy thinning so that the scalp has a "moth-eaten" appearance. This condition is not permanent.

Pathology.—In both the senile and premature forms the pathological findings are similar: there is a lessening of the subcutaneous fat and an atrophy of the corium. The sebaceous glands may be shrunken or hypertrophied. The hair follicles are diminished in size

and have gaping mouths. In many of the follicles the papillæ have entirely disappeared. There may be an endarteritis of the blood vessels.

Diagnosis.—In all instances it should be determined whether or not there is any seborrheic condition present, as this will aggravate the falling of the hair.

Prognosis.—In the senile form the outlook is always bad. In the presenile form the outlook is also bad when there is a marked family history of early baldness, but in other cases the fall can often be checked for some years. Where the loss of hair is dependent upon the general condition the outlook is good when the condition can be improved.

Treatment.—In all cases the prophylactic treatment should be insisted upon. This has already been described in the chapter upon hygiene of the hair, and consists in cleanliness and brushing, together with the proper treatment for any of the seborrheic conditions that may be present, as detailed under the chapter dealing with seborrheic diseases.

The general management of a case is of importance and consists in good general hygiene, both as to food, rest, exercise, and the cure of any systemic disease. It must always be borne in mind that an excessive amount of sunlight is bad for blonde hair.

In all cases of falling hair a light hat should be worn, false hair should be tabooed, and the pillow should be hard, as a soft pillow permits the head to sink deeply and thus cuts off ventilation. The hair should never be allowed to become dry and lustreless, as this type of hair always falls fast.

Determine the ratio of falling bed hairs (aged hairs) to those of root or papillary hairs. Normally one root hair should fall to about eight or ten bed hairs. In women this can be determined by estimating the length of the hairs, for the root hairs are usually less than five inches in length. In men, however, who wear their hair closely cut this method is of no value, and the ratio of falling hairs can only be determined by examination of the roots. The bed hair has a small round root, while the root hair has a long, large root. In all cases the combings should be collected, and the hair that has fallen each week should be put in a separate envelope and labelled. In this way it can readily be seen whether or not treatment is of any avail.

The one drug that seems to have any specific action upon the fall of hair is pilocarpine. An excellent formula is a slight modification of the one suggested by Sabouraud:

R	Alcohol	℥ iv	120.
	Spts. lavend.	℥ iii	12.
	Spts. æther	℥ iii	12.
	Pilocarpin. mur.	gr. iv	.3
	Aquæ, q.s. ad solve		
	Liq. ammon.	℥ ss	2.

Rub about a teaspoonful of this into the scalp every morning or night. This formula is especially useful in women who have slightly oily hair.

Another favorite formula is:

R	Pilocarp. mur.	/	gr. xx	1.3
	Aquæ cologn.		℥ iv	15.
	Aquæ rosæ			
	Alcohol, 55, q.s.		℥ viii	240.

This should be used like the preceding. As alcohol is drying to the hair some oil should be rubbed in once or twice a week. Very many other drugs such as cantharides, bichloride of mercury, resorcinol, etc., have been advised because of their irritating effects, but their value is more than problematical. Of course they may be of extreme value if the hair loss is occasioned by seborrhœa.

The high frequency current is frequently employed, but is probably of no more value than is a good brushing or a vigorous massage. Other forms of electricity, as well as the various vacuum caps are of no especial use. Deep massage is of some value in bringing blood to the scalp, and should always be tried every day. The fingers should be placed upon the scalp, and the scalp moved upon the underlying parts until a feeling of warmth is experienced.

HYPERTRICHOSIS.

Synonyms.—Hypertrophia pilorum; Hirsuties; Polytrichia; Superfluous hair.

Definition.—Superfluous hair is a growth of hair which is abnormal in amount or which occurs in places where only lanugo hairs should be found. For instance if a man has a beard that reaches to his feet it may be said to be abnormal, while any hair upon the face of a woman is abnormal.

Occurrence.—In women past the menopause superfluous hair of the face is extremely common, although by no means all cases come to the dermatologist for treatment.

Etiology.—When it is remembered that hair originally formed the covering of our ancestors, and that at a later date it was a secondary sexual characteristic, it can readily be seen that the presence

of abnormal growths of hair must often be an atavistic phenomenon. In women it often arises after the menopause. In other instances it is due to pulling, shaving, or in some way removing and stimulating the normal lanugo hairs. In the congenital cases heredity seems to play an important part. It is often thought that the use of vaseline or of some fatty preparation will cause the growth of hair upon the face, but this seems to be an error, for one cannot cure alopecia in this way, nor can the young man encourage his budding beard by the use of such preparations. Brunettes have superfluous hair much more frequently than do blondes.

Symptomatology.—The congenital form of hypertrichosis has already been discussed in the chapter dealing with congenital anomalies so will not be mentioned at this place.

Partial acquired hypertrichosis is more common than is the congenital variety, and occurs in the form of the excessive development of the normal hair in the usual hairy regions, or of an abnormal growth in the regions where there is usually only lanugo hair. Some men have abnormally long beards or an excessive growth upon their chests, while women may have very long pubic hairs.

But the form that gives us most concern is the development of *dark, stiff hairs upon the faces of women*, usually upon the upper lip or around the chin. This may occur in young women or after the climacteric. The home remedies such as epilation and shaving always make matters worse. These obnoxious hairs develop entirely from the lanugo hairs normally present.

Transitory hypertrichosis is very rare, and may be noticed at times upon a fractured limb that has been kept at complete rest and warm for some time. Continued irritation of a part may produce such a growth, also disease of the female organs of generation, the growth of hair disappearing when the disease is cured.

Pathology.—The lanugo hair follicles become deeper and wider, and resemble the follicles of the scalp hairs, or of the beard hairs of men.

Diagnosis.—There can be no mistake in making the diagnosis.

Prognosis.—While the condition can always be greatly benefited for a time it must be remembered that the other lanugo hairs in the neighborhood may eventually become hypertrophied and much darker in color.

Treatment.—There are three forms of treatment, first by epilation or removal by various pastes, second Röntgen ray treatment, and third removal by means of the electric needle. Epilation is always followed by an increased stiffness of the hairs and should never be resorted to. The depilatory salves also make the condition worse in

the long run, and it is more than doubtful if their use should ever be advised. A typical salve of this type is the following:

R	Barium sulphuret	3 iss	6.
	Zinci oxid	3 vi	24.
	Carmin.	gr. i	.060

This powder is mixed with enough water to make a paste and then applied to the part and washed off in three minutes. Another favorite formula is:

R	Sodii sulphid.	3 ii	8.
	Cretæ prepar.	3 vi	24.

This is made into a thick paste with water, applied locally and allowed to remain for fifteen minutes. As soon as it causes a sensation of warmth it is washed off.

While it is well known that the X-ray will permanently destroy hair still it is apt to leave a permanent disfigurement as the result of a burn, for the hair can rarely be made to fall permanently without at the same time producing a dermatitis. The best X-ray operators at the present time refuse to treat hypertrichosis.

The best way of removing superfluous hair is by means of the electric needle. The apparatus needed is a simple silver chloride electric battery with needle holder and fine, pliable needles, some men recommending jewelers broaches. It is not essential to have a milliamperemeter, as the patient can stand only a certain amount of current. As a rule from four to six cells are well borne. The needle must always be attached to the negative pole. To the positive pole is attached a cord that connects with a sponge which the patient holds in the hand. The operation is simple after one has had some practice. The face should be thoroughly washed with alcohol so as to dehydrate the surface and thus prevent the destruction of the superficial cells. Then the follicle must be catheterized: one can usually tell by the "feel" if the needle has entered the follicle. The needle should enter a depth of about an eighth of an inch, the depth varying according to the length of the follicle. After one or two hairs have been extracted the depth of the follicles can be accurately ascertained by inspecting the roots. To aid in determining the direction in which the hair enters the skin it is sometimes essential to make traction upon the hair, and catheterize at this time. When once the needle is in position the patient grasps the sponge so as to make the circuit complete. As much current should be used as the individual can comfortably stand. Minute air bubbles can usually be seen emerging from the mouth of the follicle, and later a wheal-like elevation forms. The needle should remain in position from thirty to sixty seconds. Then the sponge is

CHAPTER XXXIV.

ANOMALIES OF SWEAT SECRETION.

HYPERIDROSIS.

Synonyms.—Excessive sweating; Sudatoria.

Definition.—Hyperidrosis is a functional disease of the sweat glands characterized by an excessive secretion of sweat.

Occurrence.—While the condition is not especially rare, still the physician is not often consulted because of it.

Etiology.—Generalized sweating to an excessive degree is usually associated with physical debility, and is often found associated with such diseases as tuberculosis, cancer, etc. Any depression of the nerve tone or of the circulation may be accompanied by this symptom. Physical or mental excitement often causes it. Occasionally localized forms of it are encountered. The commonest type is excessive perspiration of the feet, and this often accompanies diseases of the arches. Secondary infection upon the surface of the feet undoubtedly causes more sweating, and thus a vicious circle is established. Excessive sweating of the face may accompany one or other of the seborrhic diseases.

Symptomatology.—The sharply circumscribed forms are interesting but rare. The most common forms are where the axillary or pedal secretions are much increased. Usually there is soon an accompanying bromidrosis, and the patient becomes an annoyance to himself and every one else in the neighborhood. There may be a slight eruption of superficial vesicles in connection. Not infrequently eczema or boils may complicate the picture.

Pathology.—Histologically the glands appear normal. The sweat does not differ from normal sweat except in quantity.

Treatment.—Absolute cleanliness must be preserved in order to prevent any infection. Astringent lotions are often exceedingly useful, tannic acid and alum in the strength of about one half an ounce to the pint of water being especially valuable. Washing with potassium permanganate and then with oxalic acid is especially useful. Crocker recommends belladonna ointments. In all cases the affected parts should be dusted with a powder consisting of salicylic acid, boric acid and some insoluble powder such as zinc carbonate or lycopodium. The cautious use of large doses of the Röntgen rays will usually prove curative in the intractable cases, inasmuch as the rays have an actual destructive action upon the glandular elements.

BRONIDROSIS

Synonym.—*Offensive sweating.*

Offensive sweating is usually but not necessarily associated with hyperidrosis. The disagreeable odor is due to a decomposition caused by the growth of various bacteria upon the surface of the skin. The treatment is the same as for hyperidrosis.

CHROMIDROSIS.

In this affection the sweat is of some distinct color, often due to the growth of some chromatogenous organism in it. In other cases it is due to malingering. In still other cases the cause is unknown.

URIDROSIS.

In exceptional cases where there is serious secretory deficiency of the kidneys some of the nitrogenous elements of the urine may be excreted through the sweat. The prognosis is always serious.



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